

FINAL TRAFFIC STUDY REPORT

Volume I

for the

CENTENNIAL CORRIDOR PROJECT

on Route	<u>58 in Bakersfield</u>
between	<u>Cottonwood Road</u>
and	<u>Interstate 5</u>

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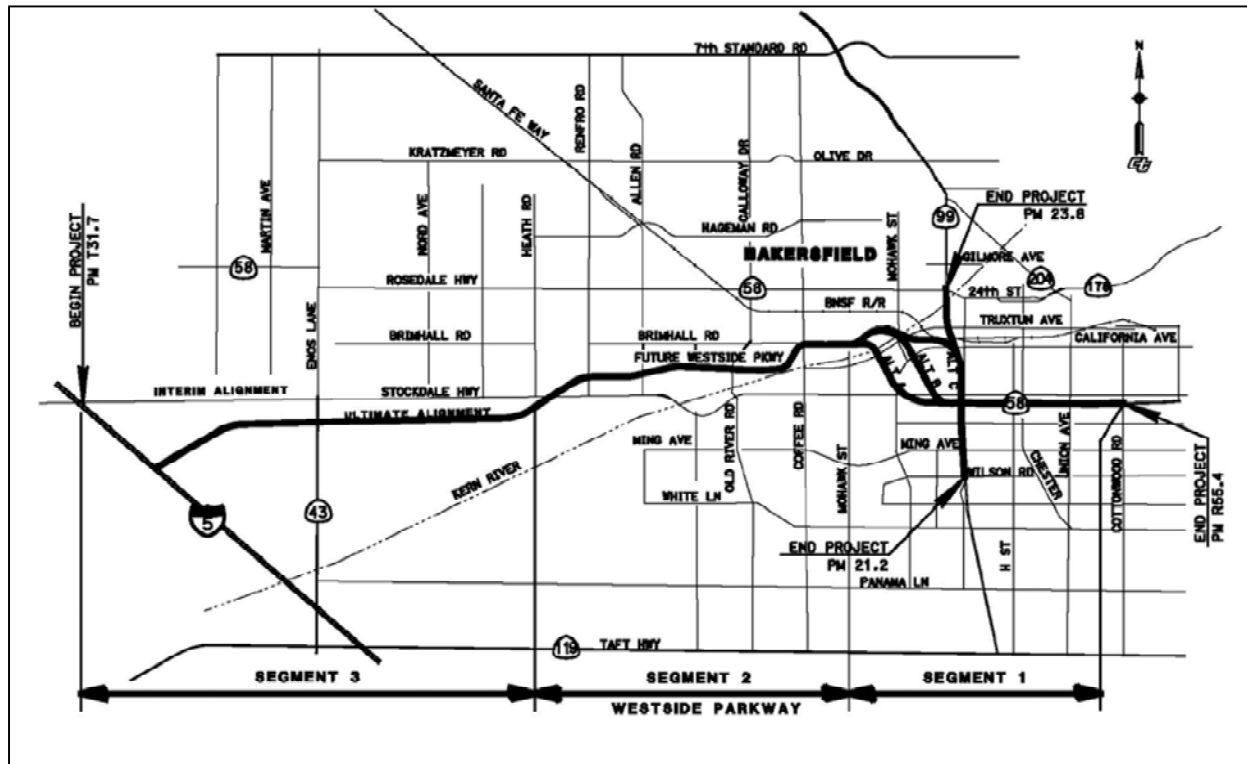


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VICINITY MAP



on Route 58 in Bakersfield
between Interstate 5
and Cottonwood Road

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EXECUTIVE SUMMARY

Project Overview

The California Department of Transportation (Caltrans) proposes to establish a new alignment for State Route 58, which would provide a continuous route along State Route 58 from Cottonwood Road on existing State Route 58, east of State Route 99 (post mile R55.6), to Interstate 5 (I-5) (post mile T31.7). Improvements to State Route 99 (post miles 21.2 to 26.2) and Westside Parkway would also be made to accommodate the connection with State Route 58.

The project is located at the southern end of the San Joaquin Valley in the city of Bakersfield in Kern County, California. The study site is bound on the east by Cottonwood Road, on the west by I-5, on the north by Gilmore Avenue, and on the south by Wilson Road. Caltrans is the lead agency for the project pursuant to the California Environmental Quality Act and the National Environmental Policy Act.

The proposed continuous route is known as the Centennial Corridor.

The purpose of the Centennial Corridor project is to provide route continuity and associated traffic congestion relief along State Route 58 within metropolitan Bakersfield and Kern County from State Route 58 east (from Cottonwood Road) to Interstate 5.

The American Association of State Highway and Transportation Officials' *A Policy on Geometric Design of Highways and Streets* (2004) defines route continuity as a roadway throughout the length of a designated route. The goal of route continuity is to ease the driving task by reducing the need to change lanes and search for directional signing. Route continuity is evaluated in terms of consistent levels of service by providing an appropriate number of lanes.

State Route 58 is a critical link in the state transportation network that is used by interstate travelers, commuters, and large numbers of trucks. Under existing conditions, State Route 58 does not meet the capacity needs of the area, and this is expected to get worse as the population grows. State Route 58 lacks continuity in central Bakersfield, which results in severe traffic congestion and reduced levels of service on adjoining highways and local streets. This route is offset by about one mile at State Route 43 (Enos Lane) and by approximately two miles at State Route 99. The merging of two major state routes (58 and 99) into one alignment between the eastern and western legs of State Route 58 degrades the traffic level of service on this segment of freeway. In addition, State Route 99's close spacing between its two interchanges with State Route 58 (east and west), in addition to an interchange at California Avenue, results in vehicles aggressively changing lanes, which adds to congestion.

State Route 58 is a high volume, east–west, interregional route in Bakersfield and is critical to the economic vitality of the region and the state. It provides significant goods and freight movement connections between Interstate 5 and State Route 99 in the Central Valley. State Route 58 also links to other important goods movement corridors nationwide such as State Route 14, Interstate 15, Interstate 40 and U.S. 395.

As noted above, there are two locations within the project study area where the route is offset: approximately one mile at State Route 43 and approximately two miles at State Route 99. Because State Route 99 is a major state highway in the Central Valley and is the only north-south freeway in Bakersfield, it carries large volumes of traffic. Regional and interregional traffic using State Route 58 contribute to the already considerable volumes of traffic on State Route 99 along the segment shared by these two highways.

The population of metropolitan Bakersfield is rapidly growing. In the area east of State Route 99, three highways (State Route 204, State Route 178 and State Route 58) provide a well-developed freeway system to handle large volumes of local traffic movement. There are no freeways in the metropolitan area west of State Route 99 to support growth. The stop- and signal-controlled local highways and streets west of State Route 99 add to commute times and provide lower levels of service. The proposed project would provide the additional capacity to accommodate this growth.

Existing Conditions

State Route 58 generally travels in the east-west direction for approximately 240 miles across California and is currently one of the most significant routes going through Bakersfield. West of Bakersfield, the route is called the Blue Star Memorial Highway and runs for roughly 100 miles until terminating at Highway 101, near Santa Margarita, California. East of Bakersfield, the route is called the Barstow-Bakersfield Highway and runs for about 140 miles until terminating at Interstate 15 near Barstow, California.

Within metropolitan Bakersfield, State Route 58 is made up of four principal sections, as illustrated on Figure 1 and described below.

Interstate 5 to Allen Road

Starting at Interstate 5, State Route 58 is currently a conventional highway, locally identified as the Rosedale Highway. Between Interstate 5 and Allen Road, the corridor is a two-lane facility surrounded by agricultural land with some recently developed residential areas.

The alignment of State Route 58 is offset by approximately one mile where the roadway jogs, and is co-located with State Route 43. The intersections of State Route 43 with State Route 58 north and State Route 58 south are stop sign controlled. Speed limits are posted at 55 miles per hour (mph).

Allen Road to State Route 99

This section of State Route 58/Rosedale Highway is principally a business route with two lanes in each direction and outside turn pocket lanes at street intersections. The highway typically includes a slightly raised, non-landscaped median varying up to about 20 feet wide. No posted speed limits are evident, except in 25 mph school zones, but traffic generally travels at about 45 to 55 mph. Although there are very few residential areas directly along this highway, this section services the communities of Rosedale, Greenacres and Fruitvale, which surround the highway.

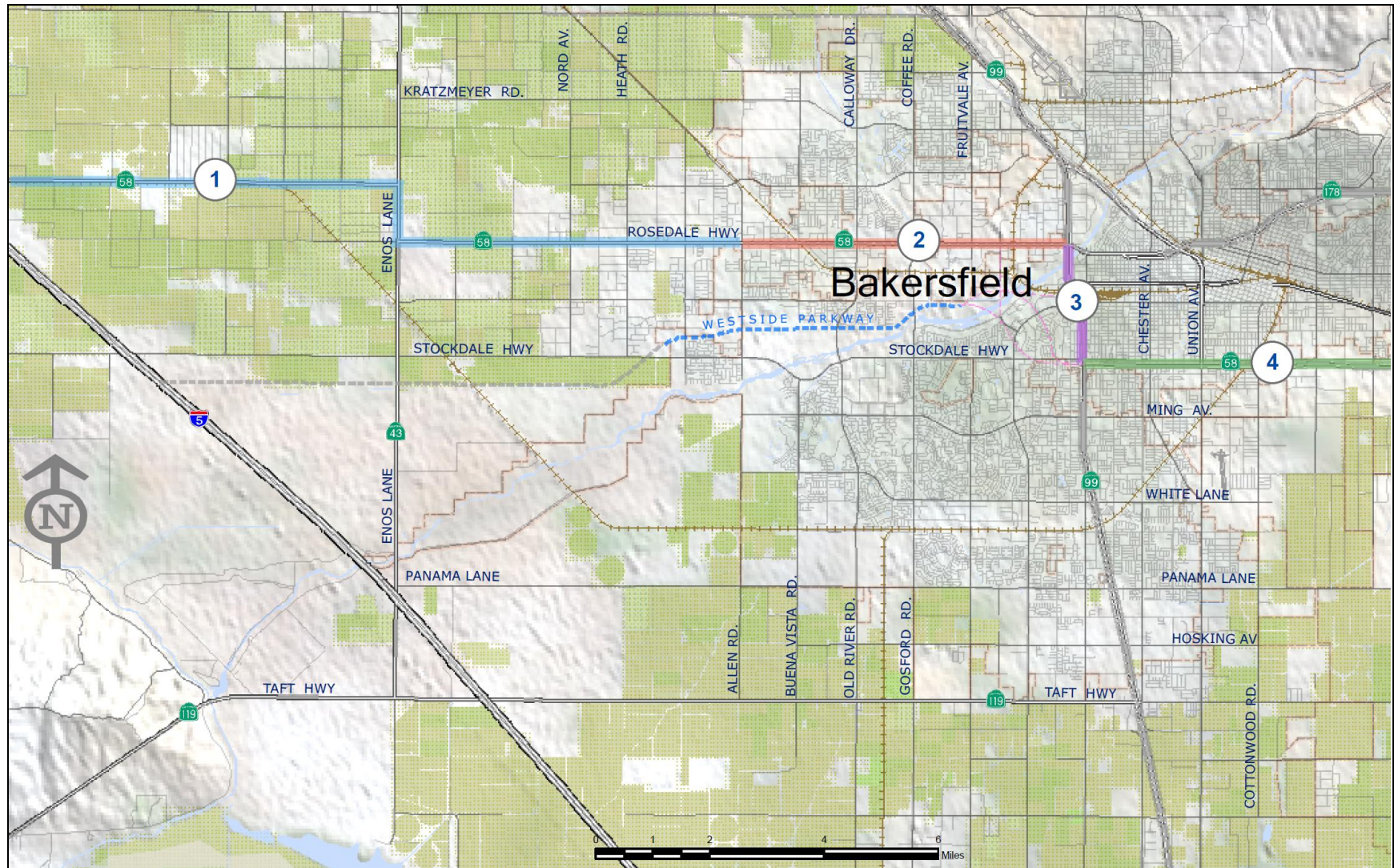


Figure 1: Principal Sections of State Route 58 in the Centennial Corridor Vicinity

The first two miles of Rosedale Highway east of Allen Road is a mix of undeveloped land, old homes and businesses, and a trailer park. Just east of Allen Road is a 25 mph zone for Rosedale Middle School; and just past this school is Rosedale Park. Continuing east, the highway elevates over the BNSF Railway and then returns to its previous ground level. Past the railroad and as the route approaches Calloway Drive, there are some small businesses and shopping areas. For about one mile on the north side of the highway, between Calloway Drive and Coffee Road, exists a large restaurant and shopping center made up of newer “big box” retailers called the Northwest Promenade. The south side has a few smaller businesses, auto shops and gas stations, but the majority of the land is open for overhead power line towers and petroleum storage reservoirs. Just east of Coffee Road, the highway crosses over both the Friant–Kern Canal and then the Calloway Canal. The posted speed limit is reduced to 25 mph for the Vista West High School located to the south. Farther east, the highway crosses over Calloway Canal again as the canal turns back north near Fruitvale Avenue. Just east of this, the highway crosses over Emery Ditch and still farther east, is another railroad crossing. For the two and a half miles between Coffee Road and the interchange with State Route 99, the highway services a few businesses and restaurants, but is mostly undeveloped or adjoined by light industrial land uses with some auto shops, storage facilities and warehouses. East of the railroad crossing, around Gibson Street, the speed limit is 40 mph. As the highway passes under State Route 99, it opens up to three lanes and will have additional single or double turn lanes as needed. The area surrounding this interchange is made up of numerous large restaurant and hotel chains. It also services the Bakersfield Heart Hospital located northeast of the interchange.

State Route 58 West to State Route 58 East (State Route 99)

State Route 99 is an extensive north–south route in the middle of California servicing more than 400 miles of the state. It extends north past Sacramento and terminates at its junction with Interstate 5, about 20 miles south of Bakersfield. At the north end of Bakersfield, it provides freeway access to the Meadows Field Kern County Airport. Farther south, it has a large interchange with State Route 204 and Airport Drive.

Within the study area, both east and west travel directions of State Route 58 have ramps that directly access southbound lanes of State Route 99. The two state routes combine and continue in the north–south direction for two miles until an interchange immediately south of Brundage Lane where both routes diverge. This portion of the freeway consists of four lanes with shoulders in each direction, separated by a concrete barrier with a posted speed limit of 65 mph (55 mph for trucks or haulers). Exit numbers descend in the south direction. State Route 99 Exit 26 will connect travelers to 24th Street/State Route 178. Exit 25 connects to the Civic Center and California Avenue. Exit 24 accesses Stockdale Highway or Brundage Lane and the section where State Route 58 diverges east from State Route 99. One mile farther south is the final exit in the study area, Exit 23 for Ming Avenue.

State Route 99 to Cottonwood Road

East of Bakersfield, State Route 58 is also called the Barstow–Bakersfield Highway and continues east for about 140 miles until its junction with Interstate 15 near Barstow, California. Traveling south on State Route 99, the access ramp for State Route 58 east elevates high as an overpass above Stockdale Highway, State Route 99, State Route 58 and Wible Road, before descending back down to access the eastbound lanes of State Route 58. Traveling west on State

Route 58, an exit ramp connects to the State Route 99 northbound lanes as an underpass below Brundage Lane and Oak Street. State Route 58 east is a divided highway separated by a metal barrier and a wide median. It consists of two lanes with shoulders in each direction and has a posted speed limit of 65 mph (55 mph for trucks or haulers). There are several residential areas offset from the highway on both sides up to the Union Avenue/State Route 204 exit. Exit numbers ascend in the east direction. Exit 111 provides access to Chester Avenue and downtown Bakersfield. About one-quarter mile west of Exit 114 for Mt. Vernon Avenue, the highway widens to three lanes in each direction and continues with this cross section as the road leaves the city of Bakersfield.

Figure 2 illustrates the location of congestion along the freeway portions of the route. State Route 58 east of State Route 99 is relatively uncongested under existing conditions except for the eastbound segment approaching Union Avenue. The shared section of State Route 99 and State Route 58 between State Route 58 east and Rosedale Highway is more congested, with slower speeds and light congestion experienced at interchange on-ramp merge areas and off-ramp diverge sections.

Future No-Build Conditions

Traffic volumes are expected to increase in the future as Kern County continues to attract new residents and Bakersfield continues its role as a crossroads of north–south and east–west interstate and intrastate personal travel and trade corridor movements. Table 1 and Figure 3 chart the history of population growth past, present and future. As has been the trend for the past 60 years, residents and jobs have been attracted to Kern County in increasing numbers. All population forecasts support a continuation of population increases once the current economic slowdown passes.

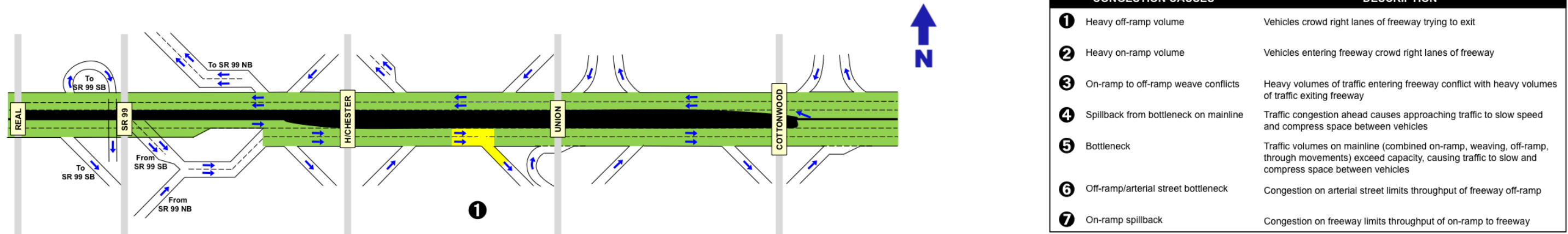
More residents, more jobs, and more trade will result in higher volumes of automobiles, trucks and trains passing through central Bakersfield. Figure 4 illustrates the pattern of traffic volumes using metropolitan Bakersfield’s arterial streets and state highways in 2006 and 2038. State highways such as State Route 58, State Route 99 and State Route 178 are expected to experience major increases in traffic flows.

As a result of increased traffic volumes, the level of congestion along State Route 58 and the shared portion of State Route 99 (between State Route 58 east and Rosedale Highway) is expected to worsen. Figure 5 illustrates the location of bottlenecks, traffic queues and slower speeds anticipated to occur by year 2038, assuming no project to connect State Route 58 east with the Westside Parkway.

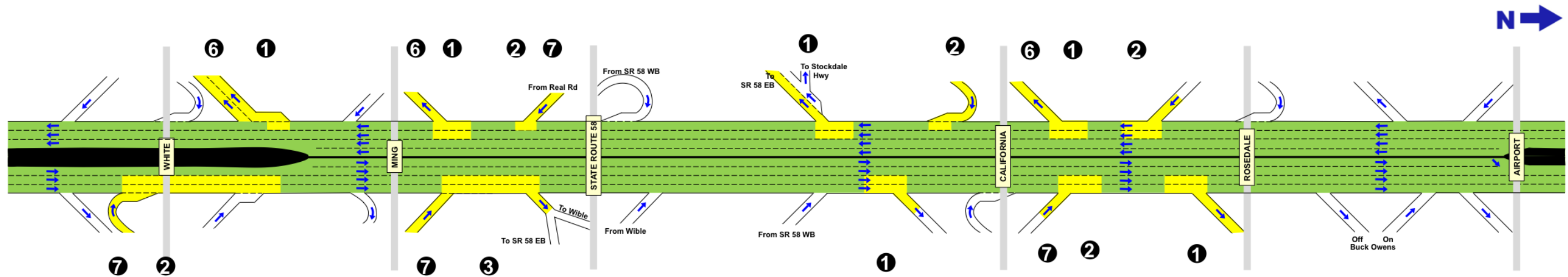
Congestion will be particularly heavy along State Route 99 in the vicinity of State Route 58, where speeds will slow below 40 mph due to heavy on- and off-ramp volumes and weaving conflicts. The extent of congestion is illustrated on the graphic by segments colored as red and yellow. Traffic will also slow along westbound State Route 58 as the traffic queue along southbound State Route 99 spills back to the on-ramp from westbound State Route 58.

STATE ROUTE 58

Segment 1



STATE ROUTE 99



LOS A, B, C, D
LOS E
LOS F

Figure 2: Existing Traffic Operational Conditions on State Route 58 and State Route 99

Table 1. Comparison of Kern County Population Forecasts

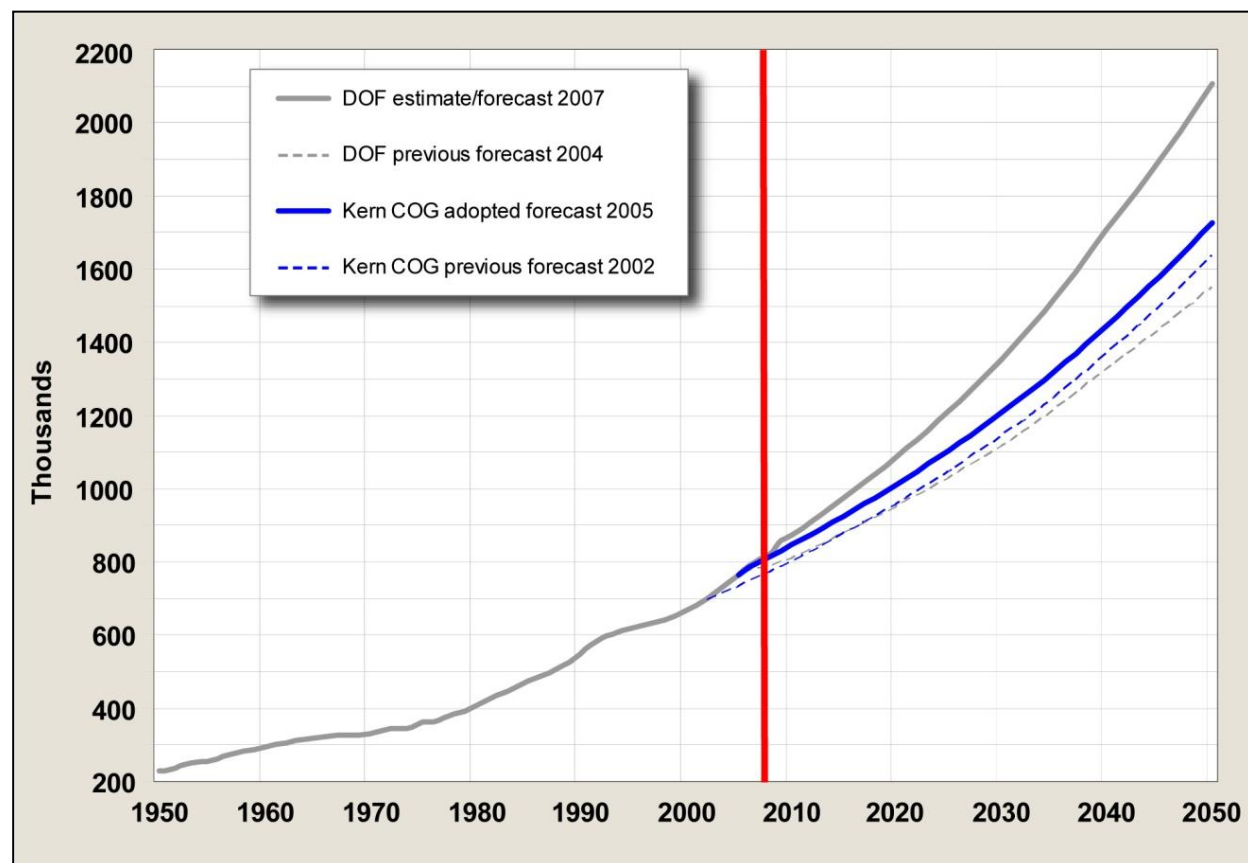
YEAR	CA DEPARTMENT OF FINANCE ¹		CALIFORNIA ECONOMIC FORECASTS REPORT ²					KERN COG ³
	2004	2007	2005	2005	2007	2008	2010	2005
1995			630,300					
2000	664,694	665,519	665,367	665,373				
2005	732,800		767,764	770,424	768,928			765,600
2010	808,808	871,728	886,417	895,263	885,176	853,486	848,730	845,600
2015			1,009,368	1,036,709	1,005,806	950,991	938,042	924,533
2020	950,112	1,086,113	1,132,743	1,185,769	1,128,324	1,057,804	1,040,449	1,010,800
2025			1,255,384	1,331,953	1,241,859	1,165,153	1,148,731	1,105,094
2030	1,114,878	1,352,627		1,474,471	1,347,635	1,272,081	1,256,152	1,208,200
2035							1,367,600	1,321,000
2040	1,325,648	1,707,239						1,444,100
2050	1,549,594	2,106,024						1,726,200

Sources:

¹California Department of Finance, Demographic Research Unit, May 2004 and July 2007

²California Department of Transportation, county-level economic forecast reports from 2005, 2006, 2007, 2008 and 2010 prepared by Dr. Mark Schniepp, California Economic Forecasts, Inc.

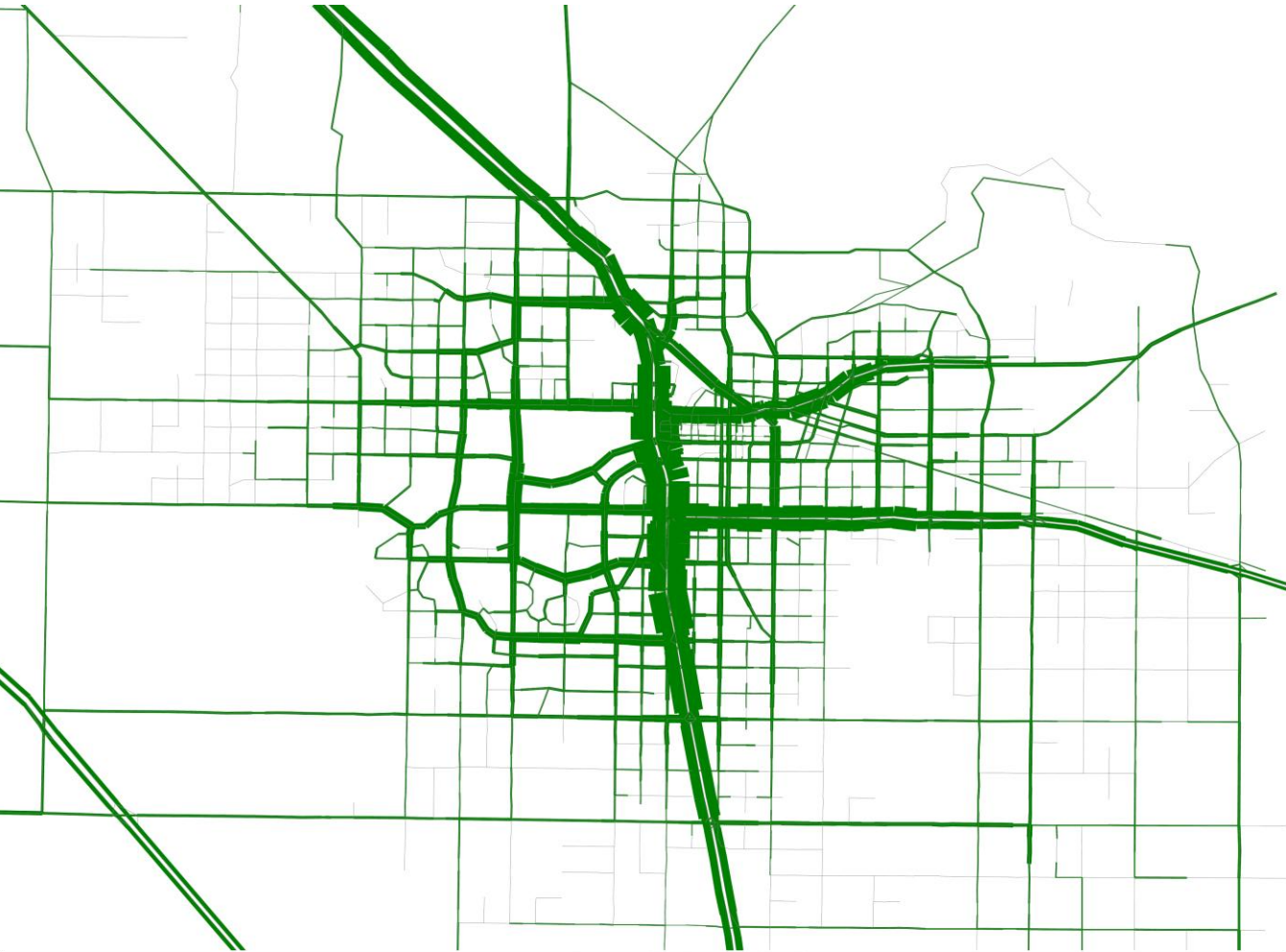
³Kern Council of Governments, Kern County Travel Demand Model Population Forecast, updated 2005.



Source: Kern Council of Governments *Final Regional Growth Forecast Report*, October 2009

Figure 3: Comparison of Kern County Population Forecasts

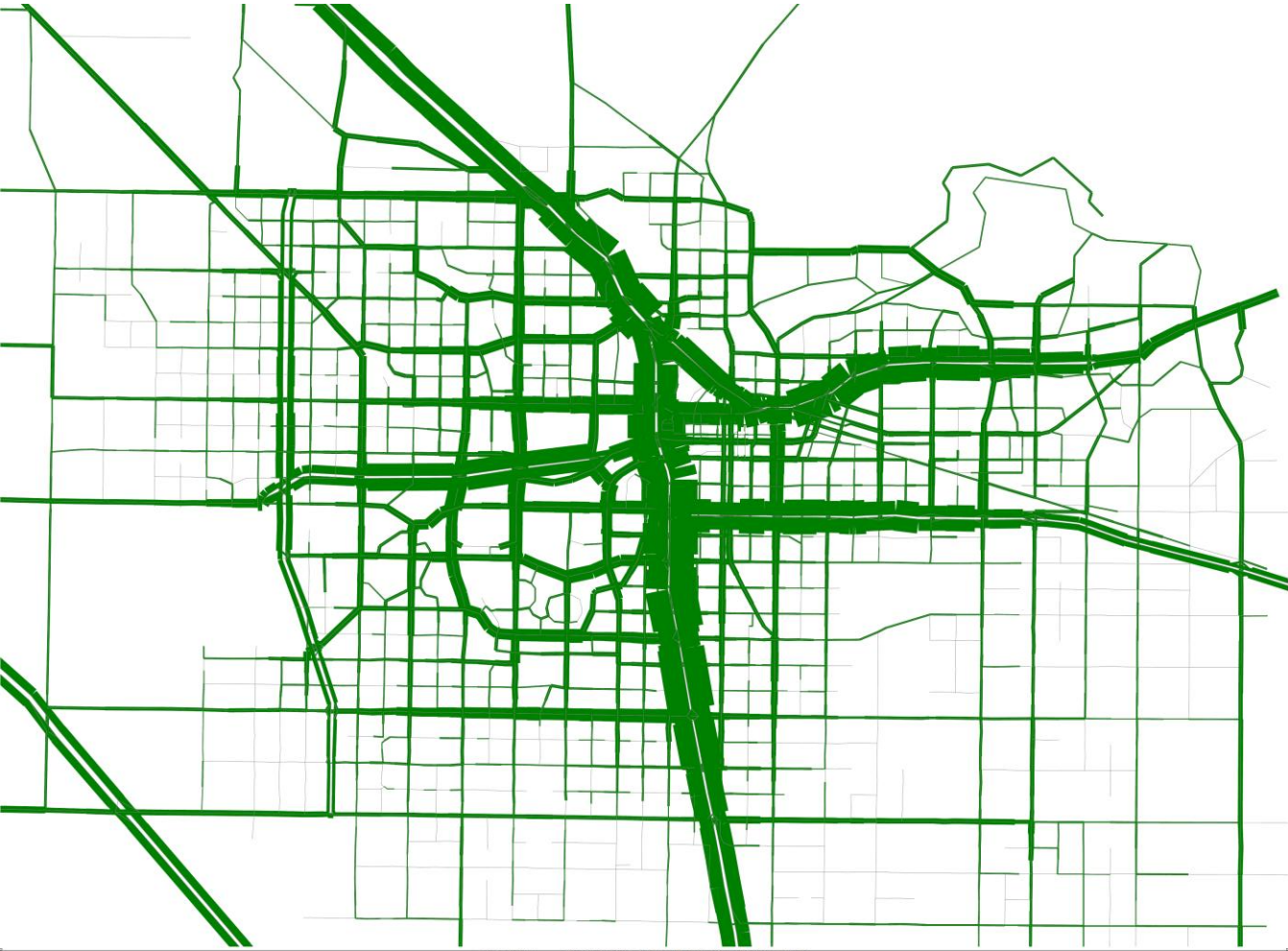
2006 Daily Traffic Volumes



cube 7/21/2011 : YEAR 2006 NOBUILD -DAILY VOLUMES Licensed to Parsons Corporation

Source: Parsons

2038 No-Build Alternative Daily Traffic Volumes

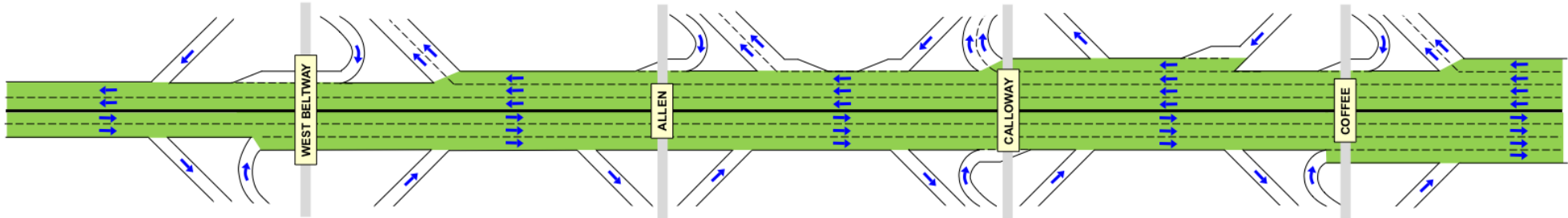


cube 7/21/2011 : YEAR 2037 NOBUILD -DAILY VOLUMES Licensed to Parsons Corporation

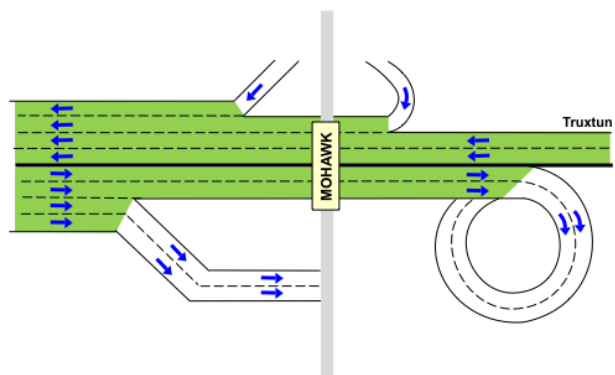
Figure 4: Difference between
Year 2006 and Year 2038
Daily Traffic Volumes

STATE ROUTE 58

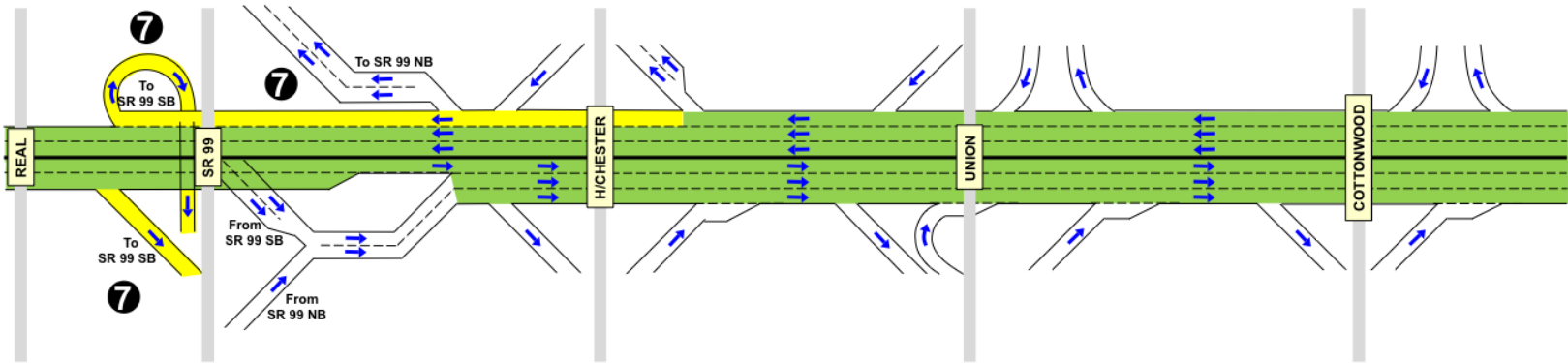
Segment 2—Westside Parkway



Segment 1—Westside Parkway

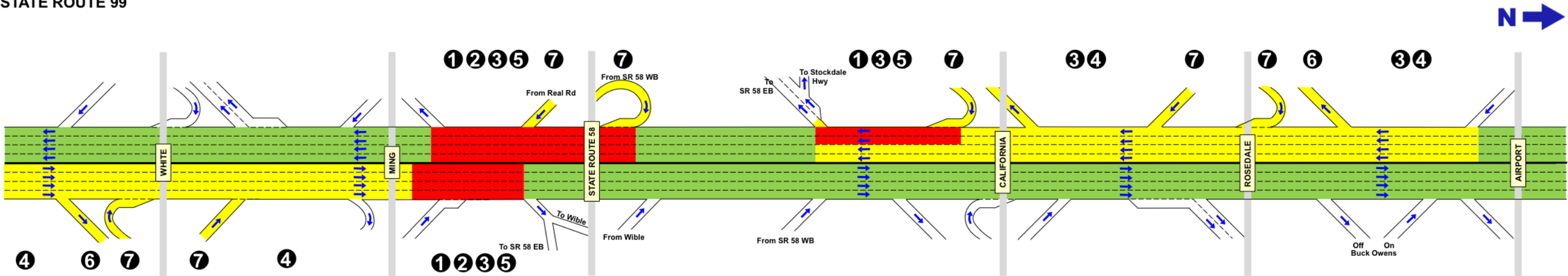


Segment 1—State Route 58 (East)



CONGESTION CAUSES		DESCRIPTION
1	Heavy off-ramp volume	Vehicles crowd right lanes of freeway trying to exit
2	Heavy on-ramp volume	Vehicles entering freeway crowd right lanes of freeway
3	On-ramp to off-ramp weave conflicts	Heavy volumes of traffic entering freeway conflict with heavy volumes of traffic exiting freeway
4	Spillback from bottleneck on mainline	Traffic congestion ahead causes approaching traffic to slow speed and compress space between vehicles
5	Bottleneck	Traffic volumes on mainline (combined on-ramp, weaving, off-ramp, through movements) exceed capacity, causing traffic to slow and compress space between vehicles
6	Off-ramp/arterial street bottleneck	Congestion on arterial street limits throughput of freeway off-ramp
7	On-ramp spillback	Congestion on freeway limits throughput of on-ramp to freeway

STATE ROUTE 99



LOS A, B, C, D
LOS E
LOS F

Figure 5: No-Build Year 2038 Forecast
Traffic Operational Conditions on
State Route 58 and State Route 99

This expected traffic congestion will impact both Kern County residents and interregional truck flows. Figure 6 illustrates the pattern of truck movements using interstate routes within Kern County (Interstate 5, State Route 99, and State Route 58/Interstate 40). Heavy truck volumes in Kern County are forecast to increase by 87 percent between the years 2000 and 2030 according to the *San Joaquin Valley Goods Movement Study*.

Proposed Project Alternatives

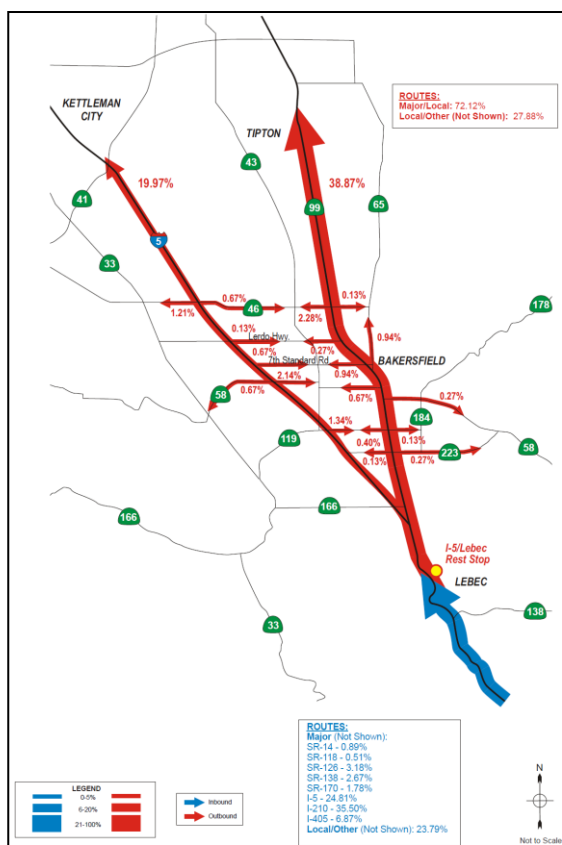
To address the anticipated increase in traffic volumes and resulting congestion, a project has been proposed to connect the segment of State Route 58 east of State Route 99 with the Westside Parkway and the western end of Stockdale Highway, and to adopt this alignment between Interstate 5 and State Route 99 as State Route 58. This project would provide continuity for State Route 58 in Kern County. In addition to providing route continuity and associated traffic congestion relief, this project would:

- Provide interregional and regional connectivity for east–west traffic traveling within metropolitan Bakersfield and Kern County
- Promote economic growth and international/interregional trade by improving linkages between existing segments of the interstate system
- Reduce commercial and regional commute time through a major freight corridor
- Improve local east–west circulation and reduce congestion to accommodate existing and planned land uses in accordance with adopted growth projections
- Improve operations and reduce congestion on the shared portion of State Route 58 and State Route 99.

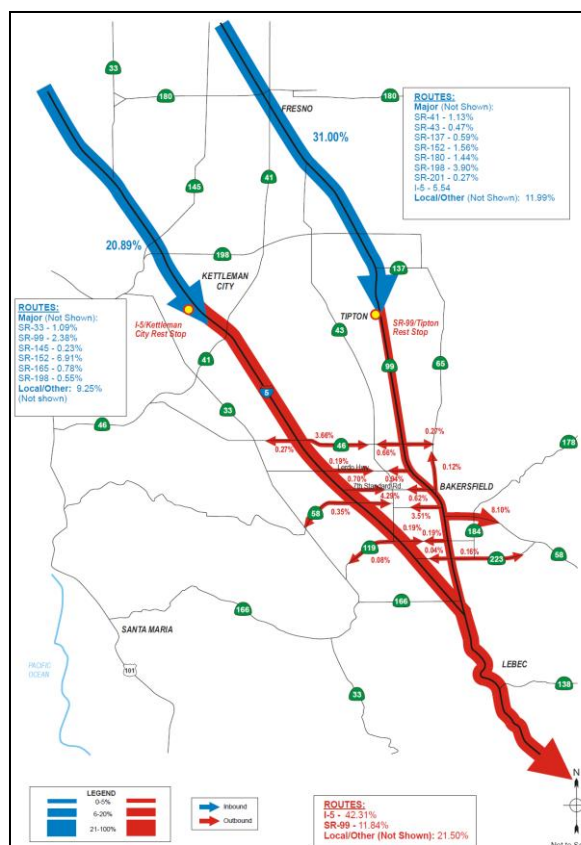
The project alternatives include three build alternatives and a no-build alternative. In addition, this traffic study report evaluates a transportation systems management alternative referenced as alternative M. These alternatives are described below.

No-build Alternative: The no-build alternative would not construct any improvements. The Westside Parkway would be constructed as a local facility, but would not connect to State Route 58, State Route 99, or Interstate 5. Rosedale Highway, the west leg of State Route 58 between State Route 99 and Interstate 5, would be widened from four lanes to six lanes between State Route 99 (Gibson Road) and Allen Road, and from two lanes to four lanes between Allen Road and Enos Lane (State Route 43).

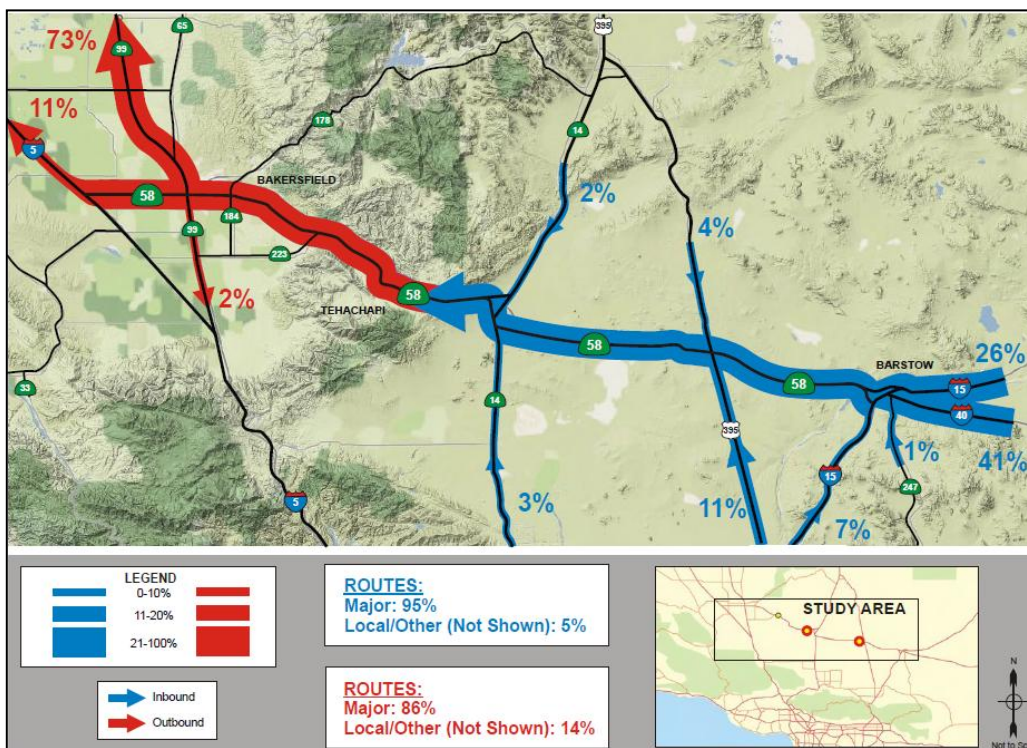
Alternative M: Alternative M, the transportation system management alternative, proposes local arterial improvements to increase the person-carrying capacity. Low-cost improvements include traffic signal optimization, intersection widening and bus service and stop improvements along all of the east–west arterial streets from Hageman Road to Ming Avenue. The same improvements are also assumed for the no-build and all build alternatives, and were therefore not specifically evaluated by this traffic study. Higher cost improvements include constructing grade separations along Rosedale Highway at four major north–south arterial streets and reducing the number of intervening signalized intersections between Allen Road and State Route 99. Detailed traffic operational analysis of the alternative indicates that Rosedale Highway would also need to



Northbound Route Choice (Lebec Rest Stop)



Southbound Route Choice (Kettleman City/Tipton Rest Stop)



Westbound Route Pattern on State Route 58 Corridor

Sources: I-5/SR-99 Origin and Destination Study, SR-58 Origin and Destination Truck Study, KOA Corporation

Figure 6: Interstate and Interregional Truck Flow Patterns in Kern County

be widened to eight lanes between Fruitvale Avenue and State Route 99, a distance of 1.8 miles, to accommodate forecast traffic volumes. This alternative assumes there is no new direct connection between the approved Westside Parkway and existing State Route 58/State Route 99 interchange.

Alternative A: Alternative A proposes to connect the east end of the Westside Parkway to State Route 58 by a six-lane facility on the west side of the State Route 58/State Route 99 interchange. This alternative would run parallel to and south of Stockdale Highway for approximately one mile before turning north and connecting to the Westside Parkway between Mohawk Street and Coffee Road. There would also be linkage to the Mohawk Street interchange providing additional connectivity with downtown Bakersfield.

Alternative B: Alternative B proposes to connect the east end of the Westside Parkway to State Route 58 by means of a six-lane facility on the west side of the State Route 58/State Route 99 interchange. The alignment would travel in a westerly direction for approximately one-half mile on the south side of Stockdale Highway, at which point it would turn to the northwest and join the Westside Parkway just east of the Mohawk Street interchange.

Alternative C: Alternative C proposes to connect the existing State Route 58 to the Westside Parkway by means of a six-lane facility that runs parallel to the existing State Route 99. Auxiliary lanes and ramp modifications on State Route 99 would be required to accommodate weaving movements associated with the new connections.

The proposed continuous alignment for State Route 58 has been divided into three distinct segments and the combination of these three segments comprises the Centennial Corridor project. Segment 1 is the eastern segment that would connect the Westside Parkway (Segment 2) to the existing State Route 58 east freeway. Segment 2 is comprised of what is locally known as the Westside Parkway and extends from Heath Road to Truxtun Avenue. Segment 3 is the western segment that extends from Interstate 5 to Heath Road.

The project's segments are numbered from east to west as shown on Figure 7.

Segment 1 extends from the easterly terminus of Segment 2 near Truxtun Avenue to the existing State Route 58 east freeway in the vicinity of Cottonwood Road. It is the only segment where construction alternatives A, B and C are being considered. These three build alternatives plus a transportation systems management/transit alternative (alternative M) and a no-build alternative are being considered, as indicated above.

Segment 2 encompasses a local freeway facility known as the Westside Parkway. As part of the Centennial Corridor project, it is anticipated that the Westside Parkway would be successfully adopted as State Route 58 (under build alternatives A, B, or C).

Westside Parkway is a local, access controlled, multilane freeway that extends from its western terminus near the intersection of Stockdale Highway near Heath Road to its eastern terminus near Mohawk Street, Truxtun Avenue and the Kern River.

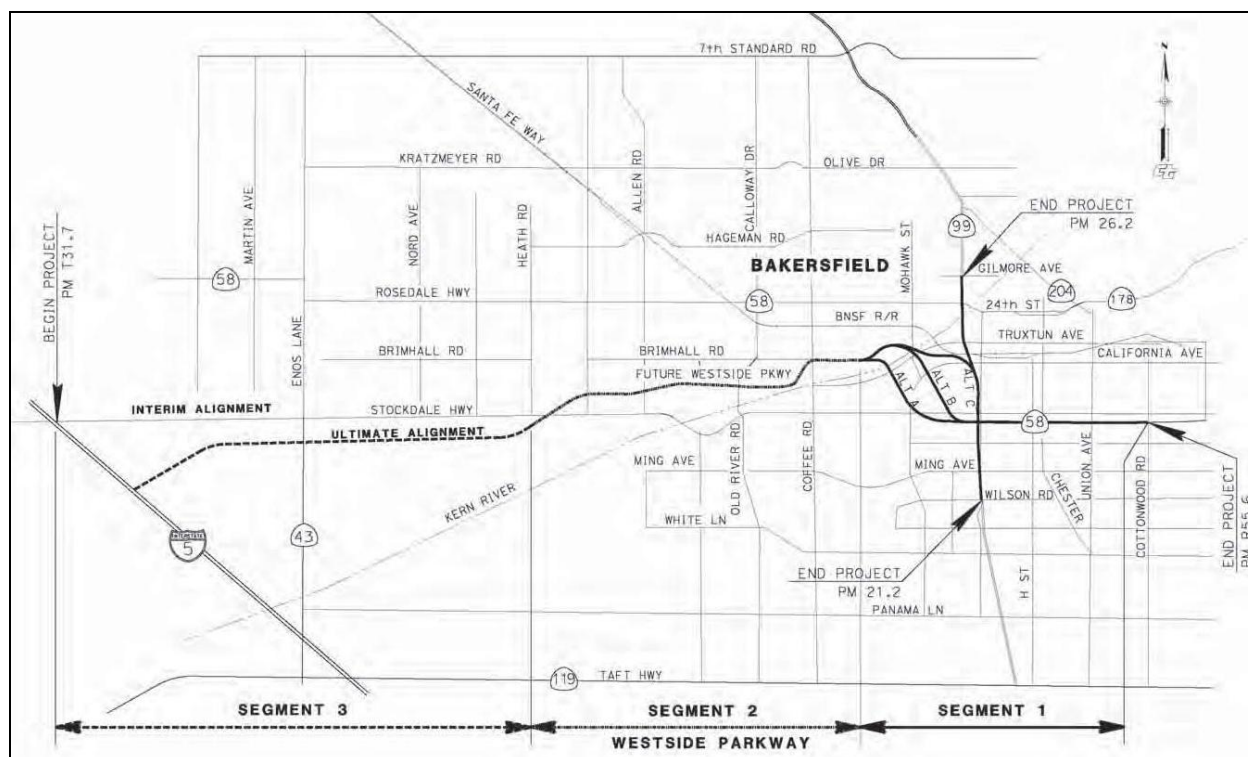


Figure 7: Segments for the Centennial Corridor

Segment 3 extends from Interstate 5, approximately two miles south of the Stockdale Highway/ Interstate 5 interchange, to the intersection of Heath Road and Stockdale Highway. The Centennial Corridor project proposes an interim connection to Interstate 5 via Stockdale Highway from the end of Segment 2 near Heath Road under build alternatives A, B, or C. Under alternative M, the connection to Interstate 5 would remain on existing State Route 58, known locally as Rosedale Highway.

This traffic operations analysis is focused on Segment 1, as the limits of construction primarily occur within this segment along with the majority of potential traffic related impacts. The traffic operations analysis addresses Segment 2 to determine if the freeway connector project (Segment 1) will impact the design requirements of the Westside Parkway. The analysis of Segment 3 traffic operations is limited to the interim connection to Interstate 5 via Stockdale Highway under build alternatives A, B, or C.

Qualitative Traffic Performance of the Project Alternatives

The purpose of this traffic study report is to examine the performance of the build alternatives from a traffic perspective and compare this performance to the no-build alternative.

As stated above, the no-build alternative would not construct any improvements. It would not provide interregional or regional connectivity for east–west traffic traveling within metropolitan Bakersfield and Kern County. It would not provide continuity for State Route 58 in Kern County. It would not promote economic growth and international/interregional trade by improving linkages between existing segments of the interstate system. The no-build alternative

would not reduce commercial and regional commute time through a major freight corridor; nor would it improve local east–west circulation. It would also not improve operations or reduce congestion on the shared portion of State Route 58 and State Route 99 between State Route 58 east and Rosedale Highway.

Six qualitative criteria have been defined to measure the effectiveness of the three build alternatives and the transportation system management/transit alternative for addressing the purpose of the Centennial Corridor project. These criteria are listed below along with Parsons' subjective assessment of the alternative's performance.

1. Provide continuity for State Route 58 in Kern County.

State Route 58 is offset by approximately one mile at Enos Lane (State Route 43) and by approximately two miles at State Route 99. The improvements proposed for the transportation systems management do not address route continuity objectives, which are the fundamental purpose of the project. Build alternatives A, B and C would provide for a continuous route from Interstate 5 to points east of Kern County via Stockdale Highway, Westside Parkway, the Centennial Corridor and State Route 58 east. This assumes that Westside Parkway and a portion of Stockdale Highway west of Heath Road will be successfully adopted as State Route 58 once the proposed project is constructed.

The transportation systems management does not meet or address this criterion, which is the purpose of the project. Build alternatives A, B and C fully meet this criterion.

2. Provide traffic congestion relief and interregional and regional connectivity for east–west traffic traveling within metropolitan Bakersfield and Kern County.

Upgrading Rosedale Highway to a super-arterial, the backbone of the transportation systems alternative, allows the facility to attract and accommodate 11,000 to 34,000 additional vehicles per day between Allen Road and State Route 99, with 24,000 additional vehicles using the upgraded route immediately west of State Route 99. Just east of Enos Lane (State Route 43), the transportation system management alternative increases the use of State Route 58 east by 1,500 vehicles per day compared to the no-build alternative.

Build alternatives A, B and C would attract between 113,700 to 121,400 vehicles per day in the section west of State Route 99. At Allen Road, use of the Westside Parkway would increase to 81,000 vehicles per day, compared to 66,000 vehicles per day using the Westside Parkway (west of Allen Road) under the no-build alternative. Use of State Route 58 east of State Route 99 would increase by 5,625 vehicles per day under alternative A to 14,485 vehicles per day under alternative C.

The transportation systems management/transit alternative provides some traffic congestion relief and improves local connectivity to State Route 99, thereby partially meeting this criterion. Build alternatives A, B and C provide substantial traffic congestion relief and interregional and regionally connectivity for east–west traffic, thereby fully meeting this criterion.

3. Promote economic growth and international and interregional trade by improving linkages between existing segments of the interstate system.

The transportation systems management alternative improves existing State Route 58 west by upgrading approximately six miles of the alignment to a super-arterial facility, from Allen Road to State Route 99. This improvement does not address or further the objective of connecting Interstate 5 to Interstate 15 and Interstate 40 (in Barstow) via a continuous State Route 58 freeway facility.

Build alternatives A, B and C would construct a freeway between the eastern end of the Westside Parkway and the western end of the State Route 58 east freeway, thereby furthering the objective of connecting Interstate 5 with Interstate 15 via a continuous State Route 58 freeway.

The transportation systems management alternative does not meet or address this criterion.

4. Reduce commercial and regional commute time through a major freight corridor.

The transportation systems management alternative reduces travel time along Rosedale Highway by reducing traffic signal delays at major cross streets and reducing the number of signalized intersections between Allen Road and State Route 99. The attractiveness of State Route 58 west as a major freight corridor is relatively unchanged from the no-build condition, as more attractive alternative routes, such as State Route 46, offer less delay to commercial vehicles traveling through, but not destined to, metropolitan Bakersfield.

Build alternatives A, B and C reduce the number of traffic signals between Interstate 5 and State Route 99 to two locations, at the intersections of Stockdale Highway with Enos Lane (State Route 43) and Heath Road. Once adopted as State Route 58, this route will become the major freight corridor for east–west heavy truck movements through Kern County.

The transportation systems management alternative reduces travel time, but does not address interstate trucking needs. Build alternatives A, B and C provide a nearly non-stop route between Interstate 5 and State Route 99.

5. Improve local east–west circulation and reduce congestion to accommodate existing and planned land uses in accordance with adopted growth projections.

Compared to the no-build alternative, alternative M, the transportation systems management alternative, attracts 11,000 to 34,000 additional vehicles per day to Rosedale Highway, thereby reducing traffic volumes on Hageman Road, Westside Parkway, Stockdale Highway and Ming Avenue. Planned commercial land uses along Rosedale Highway benefit from higher drive by levels of traffic, while residential serving roadways benefit from reduced traffic volumes.

Build alternatives A, B and C each accommodate more than 100,000 vehicles per day on the segment of State Route 58 immediately west of State Route 99. These alternatives

will remove through traffic from east–west local arterial streets, allowing residents the opportunity to access commercial establishments along these roadways under less congested conditions.

The transportation systems management alternative, as well as build alternatives A, B and C, all meet this criterion.

6. Improve operations and reduce congestion of the shared portion of State Route 58 and State Route 99.

Compared to the no-build alternative, alternative M adds more than 20,000 additional vehicles per day to State Route 99 over the shared section with State Route 58. No improvements to State Route 99 are included with the transportation systems management alternative, by virtue of the cost associated with constructing auxiliary lanes between State Route 58 west and State Route 58 east. Overall level of service degrades slightly along the shared portion of State Route 58 and State Route 99, compared to the no-build alternative.

The transportation systems management alternative does not meet or address this criterion.

Figures 8, 9, and 10 illustrate the location of congestion along State Route 58 and the portion of State Route 99 that will no longer be shared with State Route 58 under build alternatives A, B and C, respectively. Comparison of these graphics with Figure 5 indicates that the extent of the bottleneck surrounding the State Route 58/State Route 99 freeway system interchange will be significantly reduced in the southbound direction along State Route 99, and eliminated in the northbound direction. Poor performance will remain between Rosedale Highway and California Avenue in the southbound direction, however.

Build alternatives A, B and C address and largely meet this criterion.

Overall, the transportation systems management alternative partially addresses the need and purpose of the Centennial Corridor project, whereas build alternatives A, B and C fully address the need and purpose of the project.

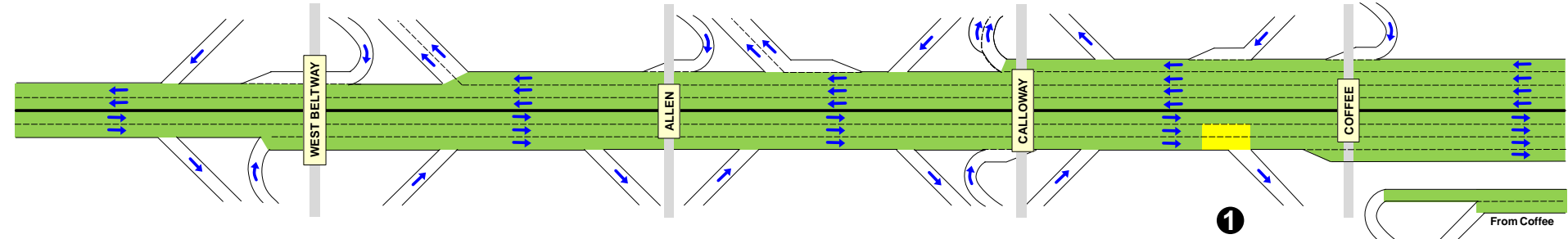
System-wide Performance of the Project Alternatives

To provide a quantified measure of overall system-wide performance, the four build alternatives were evaluated using a traffic impact analysis computer software product developed for the Federal Highway Administration. This product, the Surface Transportation Efficiency Analysis Model (STEAM) version 2.0, provides a quantitative measurement of economic impacts, natural resource usage, environmental impacts, and net monetary benefits (or costs).

The STEAM 2.0 assessment found that the transportation systems management alternative (build alternative M) provides approximately \$22.3 million of monetized benefits per year assuming design year (2038) traffic conditions, compared with \$75.3 million of benefits per year for build alternative A, \$68.8 million of benefits per year for build alternative B, and \$72.7 million of benefits per year for build alternative C, all assuming year 2038 traffic conditions. Life cycle, or

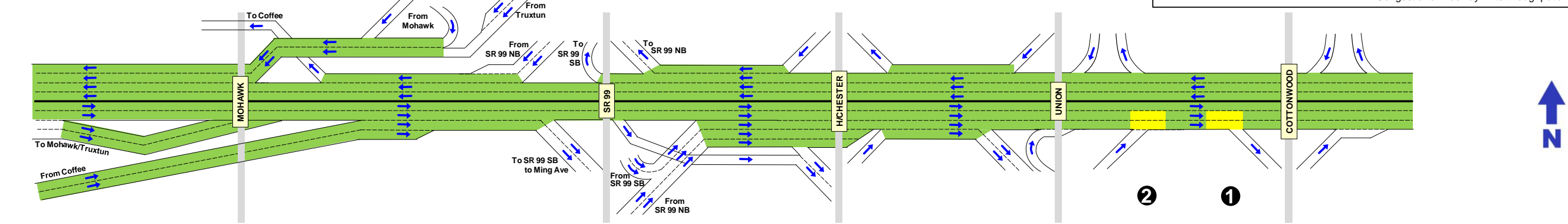
STATE ROUTE 58

Segment 2

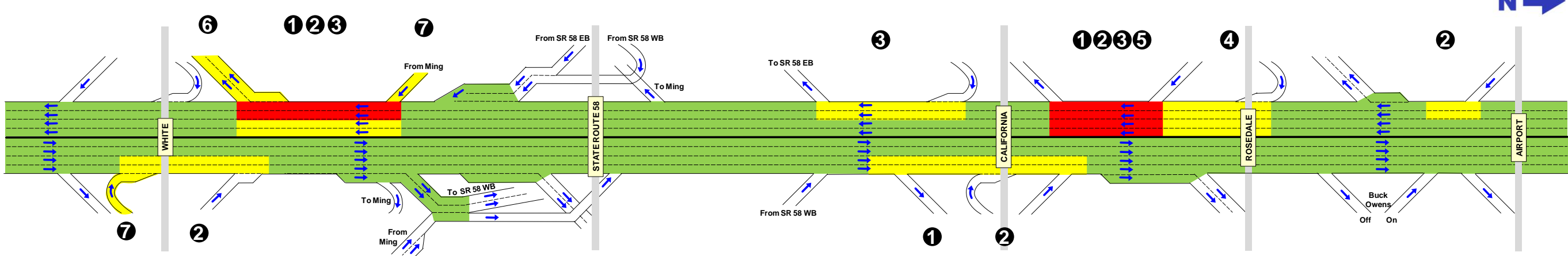


CONGESTION CAUSES	DESCRIPTION
Heavy off-ramp volume	Vehicles crowd right lanes of freeway trying to exit
Heavy on-ramp volume	Vehicles entering freeway crowd right lanes of freeway
On-ramp to off-ramp weave conflicts	Heavy volumes of traffic entering freeway conflict with heavy volumes of traffic exiting freeway
Spillback from bottleneck on mainline	Traffic congestion ahead causes approaching traffic to slow speed and compress space between vehicles
Bottleneck	Traffic volumes on mainline (combined on-ramp, weaving, off-ramp, through movements) exceed capacity, causing traffic to slow and compress space between vehicles
Off-ramp/arterial street bottleneck	Congestion on arterial street limits throughput of freeway off-ramp
On-ramp spillback	Congestion on freeway limits throughput of on-ramp to freeway

Segment 1



STATE ROUTE 99

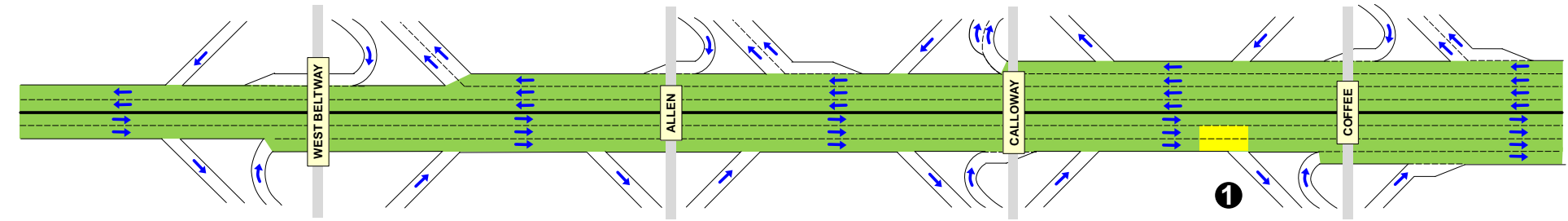


- LOS A, B, C, D
- LOS E
- LOS F

Figure 8: Alternative A
Year 2038 Forecast Traffic Operational
Conditions on State Route 58 and
State Route 99

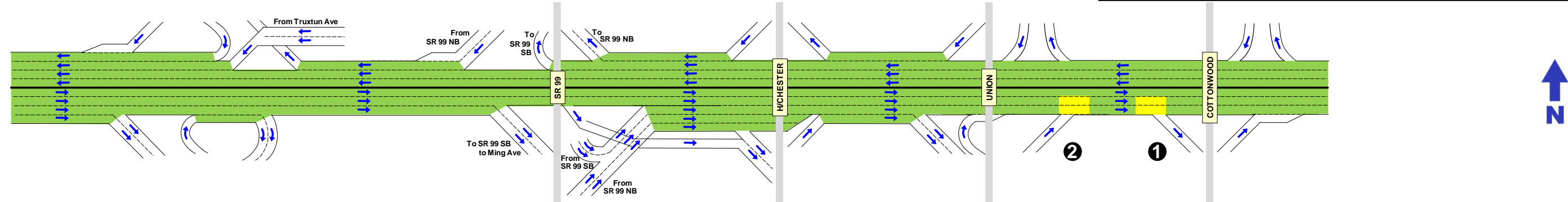
STATE ROUTE 58

Segment 2

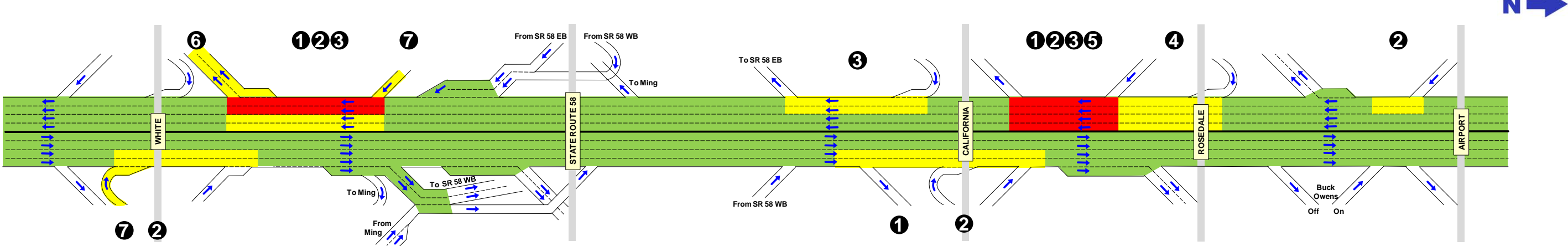


CONGESTION CAUSES	DESCRIPTION
Heavy off-ramp volume	Vehicles crowd right lanes of freeway trying to exit
Heavy on-ramp volume	Vehicles entering freeway crowd right lanes of freeway
On-ramp to off-ramp weave conflicts	Heavy volumes of traffic entering freeway conflict with heavy volumes of traffic exiting freeway
Spillback from bottleneck on mainline	Traffic congestion ahead causes approaching traffic to slow speed and compress space between vehicles
Bottleneck	Traffic volumes on mainline (combined on-ramp, weaving, off-ramp, through movements) exceed capacity, causing traffic to slow and compress space between vehicles
Off-ramp/arterial street bottleneck	Congestion on arterial street limits throughput of freeway off-ramp
On-ramp spillback	Congestion on freeway limits throughput of on-ramp to freeway

Segment 1



STATE ROUTE 99

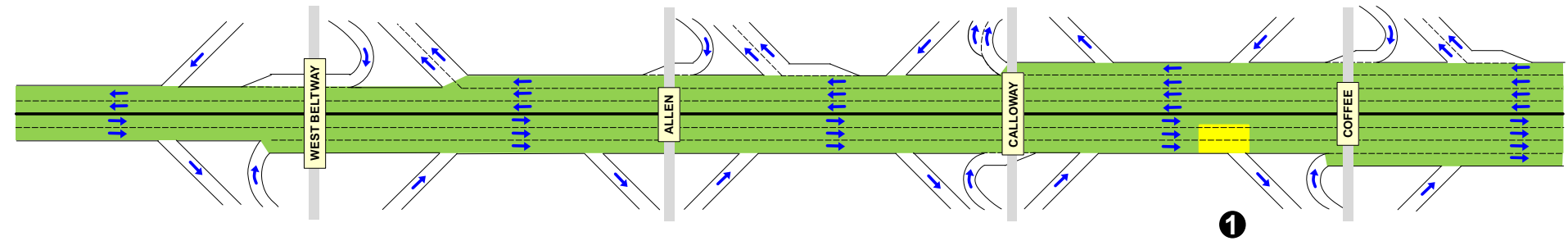


LOS A, B, C, D
LOS E
LOS F

Figure 9: Alternative B
Year 2038 Forecast Traffic Operational
Conditions on State Route 58 and
State Route 99

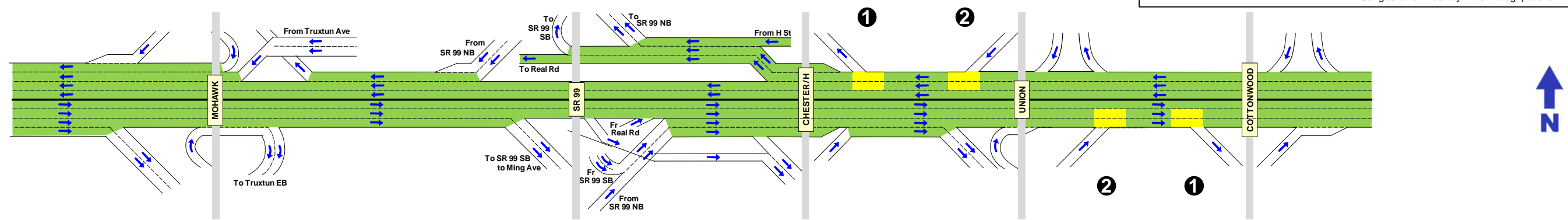
STATE ROUTE 58

Segment 2

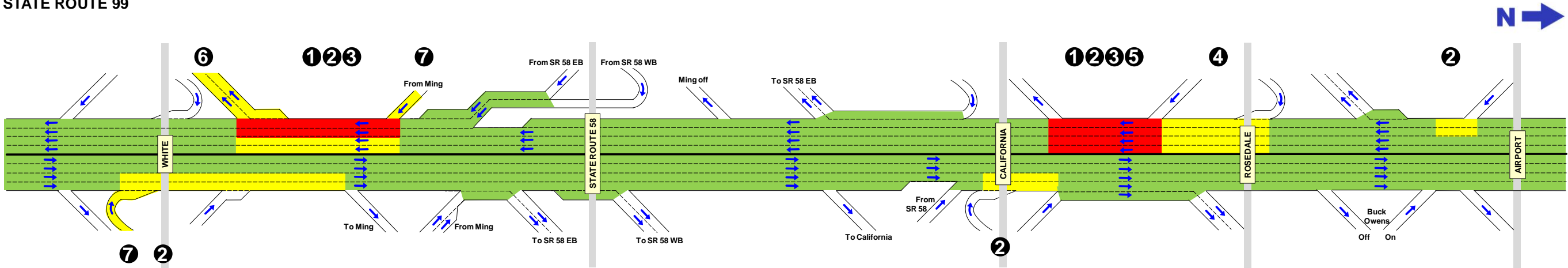


CONGESTION CAUSES	DESCRIPTION
Heavy off-ramp volume	Vehicles crowd right lanes of freeway trying to exit
Heavy on-ramp volume	Vehicles entering freeway crowd right lanes of freeway
On-ramp to off-ramp weave conflicts	Heavy volumes of traffic entering freeway conflict with heavy volumes of traffic exiting freeway
Spillback from bottleneck on mainline	Traffic congestion ahead causes approaching traffic to slow speed and compress space between vehicles
Bottleneck	Traffic volumes on mainline (combined on-ramp, weaving, off-ramp, through movements) exceed capacity, causing traffic to slow and compress space between vehicles
Off-ramp/arterial street bottleneck	Congestion on arterial street limits throughput of freeway off-ramp
On-ramp spillback	Congestion on freeway limits throughput of on-ramp to freeway

Segment 1



STATE ROUTE 99



- LOS A, B, C, D
- LOS E
- LOS F

Figure 10: Alternative C
Year 2038 Forecast Traffic Operational
Conditions on State Route 58 and
State Route 99

twenty years of benefits, amount to \$605.3 million for the transportation systems management alternative, compared with more than \$1 billion for alternatives A, B and C. The capital cost of the transportation systems management alternative has been preliminarily estimated as \$252 million compared with an estimated \$570 to \$691 million for alternatives A, B and C. Thus, the transportation systems management alternative returns approximately 60 percent of the benefits provided by the full-build alternatives, but is more cost-effective. Over time, beyond the 20-year life cycle design year horizon, the transportation systems management alternative benefits continue to decline, year by year, while build alternatives A, B and C increase due to residual capacity being available to meet growth beyond 2038.

Table 2 provides specific information regarding the benefits calculated using the STEAM 2.0 computer software product, while Table 3 presents a summary of the cost versus benefit analysis.

Table 2. Summary of Centennial Corridor Project Benefits (Year 2038)

BENEFIT TYPE	BUILD ALTERNATIVE M	BUILD ALTERNATIVE A	BUILD ALTERNATIVE B	BUILD ALTERNATIVE C
User Benefits				
In-vehicle travel time	\$ 16,259,900	\$ 64,133,300	\$ 60,348,900	\$ 64,691,200
Fuel costs	2,576,200	6,395,300	5,149,700	5,898,300
Non-fuel operating costs	(213,000)	(2,248,500)	(3,002,300)	(3,159,400)
Internal accident costs	3,857,300	7,920,100	5,645,600	6,087,000
Revenue Transfers	\$ (680,200)	(1,699,500)	\$ (1,370,700)	\$ (1,568,400)
Reduction in External Costs				
Emissions	See detailed technical studies			
Global warming				
Noise				
Accident	\$ 474,500	\$ 973,500	\$ 694,500	\$ 748,800
Other mileage based	0	0	0	0
Total Benefits \$/year in 2038	\$ 22,274,700	\$ 75,264,200	\$ 68,836,400	\$ 72,697,500
Total Benefits \$/year in 2018	32,030,800	7,759,000	14,266,100	30,803,200
Life Cycle Benefits 2018–2040 Total	\$605,287,000	\$1,030,458,000	\$1,014,868,000	\$1,230,735,000

Source: Parsons, based on STEAM 2.0

Table 3. Summary of Life-Cycle Benefits and Costs

METRIC	BUILD ALTERNATIVE M	BUILD ALTERNATIVE A	BUILD ALTERNATIVE B	BUILD ALTERNATIVE C
Cost	\$252,000,000	\$ 690,963,000	\$ 569,946,000	\$ 665,879,000
Present value of costs	\$229,180,000	\$ 627,607,000	\$ 516,534,000	\$ 603,614,000
Total benefits (Q2 2018–2040)	\$605,287,000	\$1,030,458,000	\$1,014,868,000	\$1,230,735,000
Present value of benefits	\$433,029,000	\$ 679,807,000	\$ 677,650,000	\$ 838,365,000
Present value benefit/cost ratio	1.9	1.1	1.3	1.4
Payback period	10 years	22 years	19 years	18 years

Given these findings, the authors of this traffic study conclude that the transportation systems management alternative is not a feasible alternative for meeting the long-term needs identified for the Centennial Corridor project.

Quantitative Traffic Performance of Build Alternatives A, B and C

Tables 4 through 7 present freeway mainline performance of AM peak hour conditions for the no-build alternative and build alternatives A, B and C. Graphic representations of these performance results were provided previously as Figures 5 and 8 through 10. On the whole, there is no significant difference between the build alternatives A, B and C insofar as the quality of service provided to the traveling public. None of the build alternatives stand above or below other build alternatives, except that all provide much better performance compared to the no-build alternative and the transportation system management alternative (which cannot be comparably measured).

In addition to quantifying freeway performance, level of service, a measure of traffic congestion, was calculated for 79 study area intersections. The locations of these intersections are illustrated on Figure 11. Level of service A through D meet quality of delay policy standards in metropolitan Bakersfield; while LOS E is on the cusp of excessive congestion, characterized by low speeds and traffic backups at intersections. As metropolitan areas increase in size and level of congestion, LOS E is often considered to be the limit of acceptable delay. At present, LOS D is the limit of acceptable delay in Kern County and metropolitan Bakersfield.

Table 8 provides a side-by-side comparison of intersection level of service for existing conditions versus year 2038 conditions. Alternatives A, B and C all perform, on balance, equal to the no-build alternative. There are spot locational differences due to the build alternatives reduction or elimination of bottlenecks along State Route 99, which allow more traffic to exit or enter the freeway at ramp terminal and adjacent intersections.

Comparing alternatives A, B and C with one another, alternative C yields one additional intersection failure (LOS F) compared with alternatives A and B. Intersection #51, Stockdale Highway at Real Road, fails under alternative C during the PM peak hour, as it does under no-build conditions. The intersection does not fail with alternatives A and B because the connection of Real Road to State Route 58 east is eliminated under these two build alternatives. Hence, less traffic is able to access Real Road and Stockdale Highway, in turn.

Local Circulation Impacts

In the case of each project alternative (A, B, and C), modifications to local streets and properties are required which affect travel access. The particular modifications and impacts depend on the alternative examined. Several local streets will be shortened, modified, or removed, but little or no disruption to existing circulation patterns is expected. In the limited number of cases where through traffic is eliminated on an existing local roadway, an adjacent or nearby street will provide an alternative route.

Adjustments to local roadways as a result of the proposed project are not expected to impact the provision of emergency services, such as fire or police, or affect access to health care facilities. Some minor adjustments with respect to route maps and patrol duties for fire and police

Table 4. No-Build Mainline Freeway Analysis Summary Results

Freeway Segment	NO-BUILD AM PEAK						NO-BUILD PM PEAK					
	Demand	Served	% Served	Speed	Density	LOS	Demand	Served	% Served	Speed	Density	LOS
	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)
SR-99 NB Mainline												
SR 99 NB south end of the network to White Lane off-ramp	7,025	6,570	94%	38	44.0	E	6,580	6,570	100%	60	28	D
White Lane off-ramp to White Lane loop on-ramp	5,960	5,527	93%	31	44.0	E	5,485	5,360	98%	59	23	C
White Lane loop on-ramp to White Lane direct on-ramp	7,565	5,850	77%	28	53.0	F	7,130	6,226	87%	47	33	D
White Lane diagonal on-ramp to Ming Avenue off-ramp	8,260	6,159	75%	23	66.0	F	7,740	6,805	88%	31	57	F
Ming Avenue off-ramp to Ming Avenue on-ramp	7,470	5,204	70%	18	72.0	F	6,920	5,857	85%	20	73	F
Ming Avenue on-ramp to SR 58 EB/Wible Road off-ramp	9,055	6,807	75%	32	47.0	F	8,415	7,374	88%	34	48	F
SR 58 EB/Wible Road off-ramp to Wible Road on-ramp	6,230	4,624	74%	61	19.0	C	5,915	5,185	88%	61	21	C
Wible Road on-ramp to SR 58 WB on-ramp	6,870	5,135	75%	61	21.0	C	6,525	5,683	87%	61	23	C
SR 58 WB on-ramp to California Avenue off-ramp	8,655	6,950	80%	58	29.0	D	8,240	7,383	90%	58	31	D
California Avenue off-ramp to California Avenue loop on-ramp	7,475	5,982	80%	62	24.0	C	7,360	6,598	90%	61	27	D
California Avenue loop on-ramp to California Avenue diagonal on-ramp	8,040	6,396	80%	60	26.0	D	8,100	7,058	87%	60	29	D
California Avenue diagonal on-ramp to Rosedale Highway off-ramp	8,280	6,349	77%	60	25.0	C	8,430	7,026	83%	58	28	D
Rosedale Highway off-ramp to Buck Owens Boulevard/Sillect Avenue off-ramp	5,840	4,599	79%	62	19.0	C	6,340	5,365	85%	62	22	C
Buck Owens Boulevard/Sillect Avenue off-ramp to Buck Owens Boulevard/Sillect Avenue on-ramp	5,015	3,917	78%	63	16.0	B	5,790	4,923	85%	62	20	C
Buck Owens Boulevard/Sillect Avenue on-ramp to Airport Drive off-ramp	5,615	4,451	79%	61	18.0	C	6,540	5,607	86%	60	24	C
Airport Drive off-ramp to SR 99 NB north end of the network	3,865	3,168	82%	63	13.0	B	5,125	4,390	86%	62	18	B
SR-99 SB Mainline												
SR 99 SB north end of the network to Airport Drive on-ramp	3,895	3,895	100%	64	15.0	B	4,595	4,595	100%	63	18	C
Airport Drive on-ramp to Rosedale Highway off-ramp	5,320	5,320	100%	60	22.0	C	6,710	6,412	96%	42	39	E
Rosedale Highway off-ramp to Rosedale Highway loop on-ramp	4,245	4,245	100%	63	17.0	B	5,615	5,417	96%	60	23	C
Rosedale Highway loop on-ramp to Rosedale Highway diagonal on-ramp	5,395	5,395	100%	59	19.0	C	6,995	6,891	99%	47	32	D
Rosedale Highway diagonal on-ramp to California Avenue off-ramp	7,085	7,085	100%	55	30.0	D	8,620	8,240	96%	52	39	E
California Avenue off-ramp to California Avenue on-ramp	5,885	5,885	100%	62	23.0	C	7,430	7,076	95%	40	45	E
California Avenue on-ramp to SR 58 EB/Stockdale Highway off-ramp	6,605	6,605	100%	55	27.0	D	8,480	8,048	95%	46	44	E
SR 58 EB/Stockdale Highway off-ramp to SR 58 WB on-ramp	4,715	4,715	100%	62	18.0	B	6,385	6,089	95%	55	28	D
SR 58 WB on-ramp to Real Road on-ramp	6,265	5,829	93%	52	34.0	D	8,140	7,419	91%	26	70	F
Real Road on-ramp to Ming Avenue off-ramp	6,775	6,721	99%	54	28.0	D	8,795	8,258	94%	42	47	F
Ming Avenue off-ramp to Ming Avenue on-ramp	5,545	5,410	98%	62	21.0	C	7,050	6,578	93%	61	27	D
Ming Avenue on-ramp to White Lane off-ramp	6,235	6,043	97%	61	24.0	C	7,885	7,452	95%	60	30	D
White Lane off-ramp to White Lane loop on-ramp	4,740	4,628	98%	63	18.0	C	5,855	5,522	94%	62	22	C
White Lane loop on-ramp to White Lane diagonal on-ramp	4,950	4,828	98%	62	19.0	C	6,430	6,018	94%	61	25	C
White Lane diagonal on-ramp to SR 99 SB south end of the network	5,410	4,952	92%	62	20.0	C	7,105	6,430	90%	61	26	D
WSP EB Mainline												
Westside Parkway west end of the network to West Beltway off-ramp	2,190	2,190	100%	47	24	C	2,180	2,155	99%	54	24	C
West Beltway off-ramp to West Beltway loop on-ramp	1,390	1,341	96%	61	11	B	1,225	1,130	92%	61	9	A
West Beltway loop on-ramp to West Beltway diagonal on-ramp	2,574	2,518	98%	61	14	B	2,100	1,985	95%	61	11	A
West Beltway diagonal on-ramp to Allen Road off-ramp	3,124	3,031	97%	63	16	B	2,245	2,120	94%	63	11	B
Allen Road off-ramp to Allen Road on-ramp	2,929	2,842	97%	63	15	B	2,065	1,967	95%	63	10	A
Allen Road on-ramp to Calloway Drive off-ramp	4,739	4,642	98%	60	26	C	3,675	3,524	96%	61	19	C
Calloway Drive off-ramp to Calloway Drive loop on-ramp	3,631	3,583	99%	63	19	C	2,746	2,627	96%	64	14	B
Calloway Drive loop on-ramp to Calloway Drive diagonal on-ramp	4,115	4,034	98%	62	22	C	3,127	2,974	95%	62	16	B
Calloway Drive diagonal on-ramp to Coffee Drive off-ramp	5,029	4,989	99%	59	28	D	3,889	3,706	95%	61	20	C
Coffee Drive off-ramp to Coffee Drive loop on-ramp	2,844	2,844	100%	64	15	B	2,184	2,058	94%	64	11	A
Coffee Drive loop on-ramp to Coffee Drive diagonal on-ramp	3,229	3,229	100%	63	13	B	2,614	2,469	94%	64	10	A
Coffee Drive diagonal on-ramp to Mohawk Street off-ramp	3,779	3,779	100%	63	15	B	3,089	2,920	95%	63	11	B
WSP WB Mainline												
Mohawk Street loop on-ramp to Mohawk Street diagonal ramp	1,957	1,957	100%	63	11	A	3,170	2,973	94%	62	16	B
Mohawk Street diagonal ramp to Coffee Drive off-ramp	2,962	2,919	99%	62	11	B	4,585	4,160	91%	62	16	B
Coffee Drive off-ramp to Coffee Drive loop on-ramp	1,777	1,757	99%	64	7	A	3,370	3,199	95%	64	13	B
Coffee Drive loop on-ramp to Coffee Drive diagonal on-ramp	2,332	2,225	95%	63	9	A	4,350	4,109	94%	62	17	B
Coffee Drive diagonal on-ramp to Calloway Drive diagonal off-ramp	2,977	2,840	95%	63	12	B	5,375	5,148	96%	61	22	C
Calloway Drive diagonal off-ramp to Calloway Drive loop off-ramp	2,665	2,550	96%	62	14	B	4,865	4,614	95%	61	25	C
Calloway Drive loop off-ramp to Calloway Drive on-ramp	2,085	1,996	96%	64	10	A	3,850	3,670	95%	63	20	C
Calloway Drive on-ramp to Allen Road off-ramp	2,550	2,446	96%	63	13	B	4,835	4,628	96%	60	26	C
Allen Road off-ramp to Allen Road on-ramp	1,700	1,643	97%	64	9	A	2,955	2,825	96%	63	15	B
Allen Road on-ramp to West Beltway off-ramp	1,925	1,864	97%	63	10	A	3,285	3,138	96%	62	17	B
West Beltway off-ramp to West Beltway loop on-ramp	865	825	95%	64	6	A	1,410	1,363	97%	63	11	A
West Beltway loop on-ramp to West Beltway diagonal on-ramp	1,260	1,158	92%	62	9	A	1,955	1,831	94%	61	15	B
West Beltway diagonal on-ramp to Westside Parkway west end of the network	1,550	1,452	94%	60	12	B	2,305	2,181	95%	58	19	C
SR58 EB Mainline												
SR 99 on-ramp to H Street off-ramp	4,850	4,300	89%	58	25	C	4,585	4,138	90%	59	24	C
H Street off-ramp to Chester Avenue on-ramp	4,305	3,815	89%	62	21	C	4,110	3,701	90%	62	20	C
Chester Avenue on-ramp to Union Avenue off-ramp	4,900	4,494	92%	59	25	C	4,950	4,535	92%	60	25	C
Union Avenue off-ramp to Union Avenue loop on-ramp	3,985	3,718	93%	62	20	C	4,305	3,967	92%	62	21	C
Union Avenue loop on-ramp to Union Avenue diagonal on-ramp	4,285	3,969	93%	62	22	C	5,075	4,575	90%	60	25	C
Union Avenue diagonal on-ramp to Cottonwood Road off-ramp	4,560	4,249	93%	61	23	C	5,710	5,226	92%	60	29	D
Cottonwood Road off-ramp to Cottonwood Road on-ramp	4,010	3,751	94%	62	20	C	5,110	4,698	92%	62	25	C
Cottonwood Road on-ramp to SR 58 east end of the network	4,315	4,052	94%	62	22	C	5,595	5,169	92%	61	28	D
SR58 WB Mainline												
SR 58 east end of the network to Cottonwood Road off-ramp	4,870	4,870	100%	63	26	D	4,090	4,090	100%	63	22	C
Cottonwood Road off-ramp to Cottonwood Road on-ramp	4,615	4,615	100%	62	25	C	3,850	3,830	99%	63	20	C
Cottonwood Road on-ramp to Brundage Lane off-ramp	4,855	4,855	100%	61	27	D	4,250	4,226	99%	62	23	C
Brundage Lane off-ramp to Brundage Lane on-ramp	3,975	3,931	99%	62	21	C	3,655	3,655	100%	62	20	C
Brundage Lane on-ramp to Union Avenue on-ramp	4,195	4,123	98%	61	23	C	4,050	4,008	99%	61	22	C
Union Avenue on-ramp to Chester Avenue off-ramp	4,595	4,505	98%	60	25	C	4,605	4,527	98%	60	25	C
Chester Avenue off-ramp to H Street on-ramp	3,860	3,778	98%	62	20	C	3,960	3,850	97%	46	29	D
H Street on-ramp to SR 99 NB off-ramp	4,265	4,265	100%	56	26	C	4,555	4,323	95%	39	37	E
SR 99 NB off-ramp to SR 99 SB off-ramp	2,480	2,480	100%	58	14	B	2,840	2,677	94%	23	40	E
		Bottleneck Location Queue										

Table 5. Alternative A Mainline Freeway Analysis Summary Results

Freeway Segment	ALT. A AM PEAK						ALT. A PM PEAK					
	Demand	Served	%Served	Speed	Density	LOS	Demand	Served	%Served	Speed	Density	LOS
	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)
SR-99 NB Mainline												
SR 99 NB south end of the network to White Lane off-ramp	7,075	7,075	100%	59	31	D	6,655	6,655	100%	62	27	D
White Lane off-ramp to White Lane loop on-ramp	5,950	5,848	98%	61	24	C	5,575	5,566	100%	62	23	C
White Lane loop on-ramp to White Lane direct on-ramp	7,590	7,162	94%	47	38	E	7,230	6,686	92%	51	33	D
White Lane direct on-ramp to Ming Avenue off-ramp	8,285	8,015	97%	58	32	D	7,915	7,395	93%	56	30	D
Ming Avenue off-ramp to C-D (SR 58 WB) off-ramp	7,370	7,370	100%	60	25	C	7,065	6,781	96%	53	26	C
SR 58 WB off-ramp to SR 58 EB off-ramp	6,245	6,117	98%	60	23	C	5,935	5,456	92%	60	21	C
SR 58 EB off-ramp to Ming Avenue on-ramp	4,990	4,990	100%	62	20	C	4,270	4,065	95%	63	16	B
Ming Avenue on-ramp to SR 58 on-ramp	5,990	5,888	98%	60	25	C	5,120	4,836	94%	61	20	C
SR 58 on-ramp to California Avenue off-ramp	7,175	7,163	100%	58	30	D	6,240	6,016	96%	60	24	C
California Avenue off-ramp to California Avenue loop on-ramp	6,025	6,025	100%	62	24	C	5,530	5,308	96%	62	21	C
California Avenue loop on-ramp to California Avenue direct on-ramp	7,075	6,780	96%	58	29	D	6,905	6,108	88%	57	27	D
California Avenue direct on-ramp to Rosedale Highway off-ramp	7,555	6,881	91%	57	28	D	7,805	6,598	85%	53	30	D
Rosedale Highway off-ramp to Buck Owens Boulevard/Sillect Avenue off-ramp	5,590	5,192	93%	61	21	C	6,005	5,209	87%	62	21	C
Buck Owens Boulevard/Sillect Avenue off-ramp to Buck Owens Boulevard/Sillect Avenue on-ramp	4,795	4,432	92%	63	18	B	5,605	4,859	87%	63	19	C
Buck Owens Boulevard/Sillect Avenue on-ramp to Airport Drive off-ramp	5,515	5,124	93%	59	22	C	6,395	5,618	88%	60	24	C
Airport Dr off-ramp to SR 99 NB north end of the network	3,775	3,556	94%	63	14	B	5,030	4,446	88%	62	18	B
SR-99 SB Mainline												
SR99 SB north end of the network to Airport Dr On Ramp	4,035	4,035	100%	64	16	B	4,735	4,735	100%	63	19	C
Airport Dr On Ramp to Rosedale Hwy Off Ramp	5,485	5,450	99%	60	22	C	6,805	6,805	100%	55	30	D
Rosedale Hwy Off Ramp to Rosedale Hwy Loop On Ramp	4,110	4,110	100%	63	16	B	5,495	5,495	100%	60	24	C
Rosedale Hwy Loop On Ramp to Rosedale Hwy Direct On Ramp	5,210	5,210	100%	55	21	C	6,870	6,870	100%	42	36	E
Rosedale Hwy Direct On Ramp to California Ave Off Ramp	6,045	6,045	100%	57	26	D	8,210	8,151	99%	40	51	F
California Ave Off Ramp to California Ave On Ramp	4,550	4,550	100%	62	19	C	6,555	6,442	98%	60	27	D
California Ave On Ramp to SR58 EB Off Ramp	5,110	5,110	100%	60	21	C	7,495	7,202	96%	58	30	D
SR58 EB Off Ramp to Ming Ave Off Ramp	4,155	4,155	100%	62	17	B	6,055	5,814	96%	61	24	C
Ming Ave Off Ramp to SR58 WB On Ramp	3,220	3,220	100%	63	13	B	4,850	4,617	95%	62	18	C
SR58 WB On Ramp to Ming Ave On Ramp	5,745	5,745	100%	62	18	B	7,590	7,109	94%	49	28	D
Ming Ave On Ramp to White Ln Off Ramp	6,530	6,516	100%	59	27	D	8,435	7,514	89%	34	56	F
White Ln Off Ramp to White Ln Loop On Ramp	4,860	4,841	100%	63	19	C	6,365	5,629	88%	61	23	C
White Ln Loop On Ramp to White Ln Direct On Ramp	5,120	4,953	97%	62	20	C	6,915	6,129	89%	61	25	C
White Ln Direct On Ramp to SR99 SB south end of the network	5,565	5,193	93%	62	21	C	7,560	6,506	86%	61	27	D
WSP EB Mainline												
Westside Parkway west end of the network to West Beltway off-ramp	2,230	2,230	100%	47	24	C	2,220	2,217	100%	44	25	C
West Beltway off-ramp to West Beltway loop on-ramp	1,485	1,485	100%	61	12	B	1,350	1,267	94%	60	11	A
West Beltway loop on-ramp to West Beltway direct on-ramp	3,010	2,796	93%	61	15	B	2,690	2,586	96%	61	14	B
West Beltway direct on-ramp to Allen Road off-ramp	3,300	3,073	93%	62	16	B	2,965	2,835	96%	63	15	B
Allen Road off-ramp to Allen Road on-ramp	2,920	2,699	92%	63	14	B	2,655	2,543	96%	63	13	B
Allen Road on-ramp to Calloway Drive off-ramp	4,920	4,665	95%	60	26	C	4,530	4,351	96%	61	24	C
Calloway Drive off-ramp to Calloway Drive loop on-ramp	3,960	3,796	96%	63	20	C	3,730	3,606	97%	63	19	C
Calloway Drive loop on-ramp to Calloway Drive direct on-ramp	4,900	4,653	95%	59	26	D	4,770	4,558	96%	58	26	D
Calloway Drive direct on-ramp to Coffee Drive off-ramp	6,050	5,867	97%	59	32	D	5,880	5,703	97%	60	31	D
Coffee Drive off-ramp to Truxtun Avenue/Mohawk Street off-ramp	5,025	4,836	96%	61	21	C	5,055	4,869	96%	62	21	C
Truxtun Avenue off-ramp to Coffee Drive on-ramps	1,935	1,839	95%	63	15	B	2,355	2,296	97%	63	18	C
Coffee Drive on-ramps to SR 99 SB and Ming Avenue C-D off-ramp	3,810	3,700	97%	61	20	C	4,525	4,438	98%	61	24	C
SR 99 SB off-ramp (and C-D Ming Avenue) to H Street off-ramp	1,930	1,836	95%	63	15	B	2,355	2,309	98%	62	19	C
H Street off-ramp to SR 99 NB and SB on-ramp	1,648	1,564	95%	63	12	B	2,047	1,986	97%	63	16	B
SR 99 NB and SB on-ramp to Chester Avenue on-ramp	3,535	3,408	96%	60	12	B	4,745	4,275	90%	58	16	B
Chester Avenue on-ramp to Union Avenue off-ramp	4,560	4,401	97%	61	18	C	5,935	5,410	91%	60	23	C
Union Avenue off-ramp to Union Avenue loop on-ramp	3,525	3,405	97%	63	18	C	4,910	4,517	92%	62	24	C
Union Avenue loop on-ramp to Union Avenue direct on-ramp	3,865	3,698	96%	62	20	C	5,575	5,086	91%	59	29	D
Union Avenue direct on-ramp to Cottonwood Road off-ramp	4,190	4,044	97%	62	22	C	6,150	5,727	93%	59	32	D
Cottonwood Road off-ramp to Cottonwood Road on-ramp	3,560	3,445	97%	63	18	C	5,245	4,893	93%	62	26	D
Cottonwood Road on-ramp to SR 58 east end of the network	3,870	3,739	97%	62	20	C	5,545	5,172	93%	61	28	D
WSP WB Mainline												
SR 58 east end of the network to Cottonwood Road off-ramp	5,270	5,270	100%	63	28	D	5,030	5,030	100%	63	27	D
Cottonwood Road off-ramp to Cottonwood Road on-ramp	5,035	5,035	100%	62	27	D	4,725	4,717	100%	62	25	C
Cottonwood Road on-ramp to Brundage Lane off-ramp	5,350	5,350	100%	56	33	D	5,255	5,219	99%	60	29	D
Brundage Lane off-ramp to Brundage Lane on-ramp	4,170	4,082	98%	61	22	C	4,265	4,222	99%	62	23	C
Brundage Lane on-ramp to Union Avenue on-ramp	4,535	4,409	97%	61	24	C	4,625	4,545	98%	60	25	C
Union Avenue on-ramp to Chester Avenue off-ramp	5,100	4,963	97%	61	20	C	5,395	5,323	99%	60	22	C
Chester Avenue off-ramp to H Street on-ramp	4,070	3,952	97%	62	21	C	4,280	4,249	99%	62	23	C
H Street on-ramp to SR 99 NB off-ramp	4,705	4,612	98%	61	19	C	4,940	4,901	99%	60	20	C
SR 99 NB off-ramp to SR 99 SB off-ramp	3,520	3,444	98%	61	19	C	3,820	3,795	99%	61	21	C
SR 99 SB off-ramp to SR 99 NB on-ramp	2,320	2,218	96%	62	18	B	2,595	2,581	99%	62	21	C
SR 99 NB on-ramp to Coffee Drive off-ramp	3,820	3,753	98%	61	20	C	4,225	4,290	102%	61	23	C
Coffee Drive off-ramp to Mohawk Street/Truxtun Avenue on-ramp	1,870	1,843	99%	63	15	B	2,650	2,650	100%	62	22	C
Mohawk Street/Truxtun Avenue on-ramp to Coffee Drive loop on-ramp	4,030	3,966	98%	63	16	B	6,430	6,355	99%	62	26	C
Coffee Drive loop on-ramp to Coffee Drive direct on-ramp	4,180	4,101	98%	63	16	B	6,670	6,556	98%	61	27	D
Coffee Drive direct on-ramp to Calloway Drive direct off-ramp	4,480	4,348	97%	62	17	B	7,220	7,073	98%	60	29	D
Calloway Drive direct off-ramp to Calloway Drive loop off-ramp	3,830	3,689	96%	62	15	B	6,225	6,091	98%	61	25	C
Calloway Drive loop off-ramp to Calloway Drive on-ramp	2,920	2,800	96%	63	15	B	4,875	4,764	98%	62	26	C
Calloway Drive on-ramp to Allen Road off-ramp	3,420	3,287	96%	62	18	B	5,755	5,589	97%	58	32	D
Allen Road off-ramp to Allen Road on-ramp	2,270	2,168	96%	64	11	B	3,525	3,454	98%	63	18	C
Allen Road on-ramp to West Beltway off-ramp	2,620	2,492	95%	62	13	B	3,895	3,792	97%	61	21	C
West Beltway off-ramp to West Beltway loop on-ramp	1,120	1,090	97%	64	9	A	1,510	1,468	97%	63	12	B
West Beltway loop on-ramp to West Beltway direct on-ramp	1,440	1,318	92%	62	11	A	1,935	1,842	95%	61	15	B
West Beltway direct on-ramp to Westside Parkway west end of the network	1,745	1,600	92%	60	13	B	2,280	2,184	96%	59	19	C
SR99 NB C-D												
SR 99 NB C-D on-ramp to Westside Parkway C-D off-ramp	2,500	2,500	100%	53	16	B	2,480	2,480	100%	53	16	B
SR99 SB C-D												
Westside Parkway C-D on-ramp to SR 99 SB C-D on-ramp	2,525	2,525	100%	45	19	C	2,740	2,662	97%	42	21	C
WSP EB C-D 1												
Begin C-D (Coffee Drive loop on-ramp to Coffee Drive direct on-ramp)	915	915	100%	49	19	C	1,100	1,100	100%	49	23	C
Coffee Drive direct on-ramp to end of C-D network (Westside Parkway EB)	1,875	1,875	100%	53	18	B	2,170	2,155	99%	53	20	C
WSP EB C-D 2												
Begin C-D to Mohawk Street off-ramp	3,090	3,030	98%	52	23	C	2,700	2,608	97%	53	20	C
Mohawk Street off-ramp to Mohawk Street on-ramp	1,580	1,536	97%	54	14	B	1,300	1,250	96%	54	12	B
WSP EB C-D 3												
WSP EB C-D On Ramp to SR 99 SB Off Ramp	1,880	1,851	98%	52	15	B	2,170	2,107	97%	51	17	B
SR 99 SB Off Ramp to SR 99 SB C-D On Ramp	555	546	98%	47	7	A	655	626	96%	47	8	A
SR 99 SB C-D On Ramp to Ming Ave	1,490	1,468	99%	48	15	B	1,860	1,805	97%	44	23	C
WSP WB C-D												
Truxtun Avenue on-ramp to Mohawk Street loop on-ramp	800	780	98%	64	6	A	1,710	1,653	97%	64	13	B
Mohawk Street loop on-ramp to Mohawk Street direct on-ramp	1,305	1,270	97%	62	10	A	2,735	2,620	96%	60	22	C
Mohawk Street direct on-ramp to Westside Parkway on-ramp (end of C-D network)	2,160	2,127	98%	61	14	B	3,780	3,672	97%	59	25	C
		Bottleneck Location Queue										

Table 6. Alternative B Mainline Freeway Analysis Summary Results

Freeway Segment	ALT. B AM PEAK						ALT. B PM PEAK					
	Demand	Served	% Served	Speed	Density	LOS	Demand	Served	% Served	Speed	Density	LOS
	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)
SR-99 NB Mainline												
SR-99 NB south end of the network to White Lane offramp	6,945	6,945	100%	62	28	D	6,695	6,695	100%	62	27	D
White Lane off-ramp to White Lane loop on-ramp	5,865	5,865	100%	61	24	C	5,600	5,558	99%	62	23	C
White Lane loop on-ramp to White Lane direct on-ramp	7,495	7,133	95%	46	39	E	7,230	6,610	91%	51	32	D
White Lane direct on-ramp to Ming Avenue off-ramp	8,200	8,094	99%	58	32	D	7,905	7,433	94%	59	29	D
Ming Avenue off-ramp to C-D (SR 58 WB) off-ramp	7,325	7,325	100%	61	25	C	7,045	6,861	97%	61	23	C
SR 58 WB off-ramp to SR 58 EB off-ramp	6,055	5,970	99%	60	22	C	5,840	5,645	97%	61	21	C
SR 58 EB off-ramp to Ming Avenue on-ramp	4,805	4,784	100%	62	19	C	4,185	4,106	98%	63	16	B
Ming Avenue on-ramp to SR 58 on-ramp	5,755	5,668	98%	60	23	C	4,960	4,828	97%	61	20	C
SR 58 on-ramp to California Avenue off-ramp	6,855	6,855	100%	59	28	D	6,055	5,965	99%	60	24	C
California Avenue off-ramp to California Avenue loop on-ramp	5,755	5,753	100%	62	23	C	5,371	5,191	97%	62	21	C
California Avenue loop on-ramp to California Avenue direct on-ramp	6,815	6,674	98%	56	30	D	6,740	6,024	89%	58	26	C
California Avenue direct on-ramp to Rosedale Highway off-ramp	7,285	6,933	95%	56	29	D	7,650	6,545	86%	54	29	D
Rosedale Highway off-ramp to Buck Owens Boulevard/Sillect Avenue off-ramp	5,545	5,454	98%	61	22	C	6,020	5,283	88%	62	21	C
Buck Owens Boulevard/Sillect Avenue off-ramp to Buck Owens Boulevard/Sillect Avenue on-ramp	4,725	4,646	98%	62	19	C	5,650	4,934	87%	63	20	C
Buck Owens Boulevard/Sillect Avenue on-ramp to Airopot Drive off-ramp	5,420	5,271	97%	58	23	C	6,425	5,719	89%	60	24	C
Airopot Drive off-ramp to SR 99 NB north end of the network	3,700	3,591	97%	63	14	B	5,020	4,502	90%	62	18	C
SR-99 SB Mainline												
SR 99 SB north end of the network to Airopot Drive on-ramp	4,025	4,025	100%	64	16	B	4,740	4,740	100%	63	19	C
Airopot Drive on-ramp to Rosedale Highway off-ramp	5,425	5,425	100%	60	22	C	6,825	6,825	100%	56	30	D
Rosedale Highway off-ramp to Rosedale Highway loop on-ramp	4,075	4,075	100%	63	17	B	5,535	5,535	100%	61	23	C
Rosedale Highway loop on-ramp to Rosedale Highway direct on-ramp	5,170	5,170	100%	55	21	C	6,930	6,930	100%	44	35	E
Rosedale Highway direct on-ramp to California Avenue off-ramp	5,825	5,825	100%	57	26	C	8,000	8,000	100%	43	45	F
California Avenue off-ramp to California Avenue on-ramp	4,370	4,370	100%	62	18	B	6,340	6,323	100%	60	26	D
California Avenue on-ramp to SR 58 EB off-ramp	4,905	4,905	100%	61	20	C	7,290	7,175	98%	57	30	D
SR 58 EB off-ramp to Ming Avenue off-ramp	3,990	3,990	100%	62	16	B	5,875	5,796	99%	61	24	C
Ming Avenue off-ramp to SR 58 WB on-ramp	3,150	3,150	100%	63	13	B	4,750	4,750	100%	62	19	C
SR 58 WB on-ramp to Ming Avenue on-ramp	5,760	5,664	98%	62	17	B	7,610	7,551	99%	59	24	C
Ming Avenue on-ramp to White Lane off-ramp	6,535	6,447	99%	59	26	D	8,465	8,044	95%	37	53	F
White Lane off-ramp to White Lane loop on-ramp	4,835	4,752	98%	63	19	C	6,405	6,075	95%	61	25	C
White Lane loop on-ramp to White Lane direct on-ramp	5,075	4,975	98%	62	20	C	6,945	6,550	94%	61	27	D
White Lane direct on-ramp to SR 99 SB south end of the network	5,510	5,243	95%	62	21	C	7,570	6,939	92%	61	28	D
WSP EB Mainline												
WSP west end of the network to West Beltway Off Ramp	2,220	2,220	100%	47	24	C	2,215	2,176	98%	46	24	C
West Beltway Off Ramp to West Beltway Loop On Ramp	1,495	1,468	98%	61	12	B	1,350	1,260	93%	60	10	A
West Beltway Loop On Ramp to West Beltway Direct On Ramp	2,990	2,956	99%	61	16	B	2,680	2,551	95%	61	14	B
West Beltway Direct On Ramp to Allen Rd Off Ramp	3,290	3,233	98%	62	17	B	2,945	2,824	96%	63	15	B
Allen Rd Off Ramp to Allen Rd On Ramp	2,915	2,861	98%	63	15	B	2,645	2,541	96%	63	13	B
Allen Rd On Ramp to Calloway Dr Off Ramp	4,910	4,909	100%	60	27	D	4,495	4,356	97%	61	24	C
Calloway Dr Off Ramp to Calloway Dr Loop On Ramp	3,960	3,940	99%	63	21	C	3,680	3,570	97%	63	19	C
Calloway Dr Loop On Ramp to Calloway Dr Direct On Ramp	4,930	4,821	98%	59	27	D	4,690	4,516	96%	60	25	C
Calloway Dr Direct On Ramp to Coffee Dr Off Ramp	6,055	6,018	99%	60	32	D	5,785	5,677	98%	60	31	D
Coffee Dr Off Ramp to Coffee Dr Loop On Ramp	4,980	4,936	99%	62	26	D	4,910	4,803	98%	62	26	C
Coffee Dr Loop On Ramp to Coffee Dr Direct On Ramp	5,970	5,892	99%	62	24	C	5,960	5,874	99%	61	24	C
Coffee Dr Direct On Ramp to Mohawk St Off Ramp	7,040	6,691	95%	59	28	D	7,075	6,961	98%	58	29	D
Mohawk St Off Ramp to Mohawk St On Ramp	5,220	4,918	94%	60	27	D	5,425	5,379	99%	61	30	D
Mohawk St On Ramp to Truxtun Ave Off Ramp	5,735	5,422	95%	60	24	C	6,515	6,410	98%	57	29	D
Truxtun Ave Off Ramp to SR99 SB C-D Off Ramp(SR99 SB&Ming Ave)	4,135	3,835	93%	62	21	C	5,115	5,020	98%	61	28	D
SR99 SB C-D Off Ramp(SR99 SB&Ming Ave) to H St Off Ramp	2,095	1,934	92%	63	15	B	2,760	2,690	97%	62	22	C
H St Off Ramp to SR 99 NB&SB On Ramp	1,762	1,625	92%	63	13	B	2,393	2,353	98%	62	19	C
SR99 NB&SB On Ramp to Chester Ave On Ramp	3,605	3,487	97%	63	13	B	5,055	4,957	98%	61	18	C
Chester Ave On Ramp to Union Ave Off Ramp	4,600	4,462	97%	61	18	C	6,260	6,160	98%	59	26	D
Union Ave Off Ramp to Union Ave Loop On Ramp	3,580	3,456	97%	63	18	C	5,210	5,088	98%	62	28	D
Union Ave Loop On Ramp to Union Ave Direct On Ramp	3,905	3,705	95%	62	20	C	5,845	5,625	96%	59	32	D
Union Ave Direct On Ramp to Cottonwood Rd Off Ramp	4,235	4,032	95%	62	22	C	6,410	6,242	97%	59	33	D
Cottonwood Rd Off Ramp to Cottonwood Rd On Ramp	3,600	3,413	95%	63	18	C	5,470	5,317	97%	62	29	D
Cottonwood Rd On Ramp to SR58 east end of the network	3,915	3,717	95%	63	20	C	5,765	5,578	97%	61	30	D
WSP WB Mainline												
SR 58 east end of the network to Cottonwood Road off-ramp	5,220	5,220	100%	63	28	D	4,970	4,970	100%	63	26	D
Cottonwood Road off-ramp to Cottonwood Road on-ramp	5,015	5,015	100%	62	27	D	4,675	4,641	99%	62	25	C
Cottonwood Road on-ramp to Brundage Lane off-ramp	5,340	5,340	100%	60	30	D	5,195	5,129	99%	61	28	D
Brundage Lane off-ramp to Brundage Lane on-ramp	4,225	4,225	100%	62	23	C	4,205	4,166	99%	62	22	C
Brundage Lane on-ramp to Union Avenue on-ramp	4,600	4,597	100%	61	25	C	4,560	4,472	98%	61	24	C
Union Avenue on-ramp to Chester Avenue off-ramp	5,180	5,180	100%	61	21	C	5,310	5,267	99%	60	22	C
Chester Avenue off-ramp to H Street on-ramp	4,085	4,085	100%	62	22	C	4,210	4,210	100%	62	23	C
H Street on-ramp to SR 99 NB off-ramp	4,785	4,785	100%	61	20	C	4,925	4,925	100%	61	20	C
SR 99 NB off-ramp to SR 99 SB off-ramp	3,685	3,680	100%	61	20	C	3,830	3,830	100%	61	21	C
SR 99 SB off-ramp to SR 99 NB on-ramp	2,514	2,471	98%	62	20	C	2,610	2,610	100%	62	21	C
SR 99 NB on-ramp to Mohawk Street off-ramp	4,199	4,199	100%	61	23	C	4,355	4,286	98%	61	23	C
Mohawk Street off-ramp to Truxtun Avenue on-ramp	3,319	3,319	100%	61	27	D	3,610	3,585	99%	61	29	D
Truxtun Avenue on-ramp to Mohawk Street loop on-ramp	4,339	4,336	100%	61	24	C	5,475	5,429	99%	60	30	D
Mohawk Street loop on-ramp to Mohawk Street direct ramp	4,994	4,975	100%	62	20	C	6,730	6,629	98%	61	27	D
Mohawk Street direct ramp to Coffee Drive off-ramp	5,784	5,521	95%	61	21	C	7,720	7,230	94%	59	28	D
Coffee Drive off-ramp to Coffee Drive loop on-ramp	3,609	3,518	97%	63	14	B	5,690	5,565	98%	62	22	C
Coffee Drive loop on ramp to Coffee Drive direct on-ramp	3,769	3,657	97%	63	14	B	5,970	5,820	97%	62	23	C
Coffee Drive direct on-ramp to Calloway Drive direct off-ramp	4,094	3,892	95%	63	15	B	6,545	6,360	97%	61	26	C
Calloway Drive direct off-ramp to Calloway Drive loop off-ramp	3,494	3,319	95%	62	13	B	5,620	5,358	95%	61	22	C
Calloway Drive loop off-ramp to Calloway Drive on-ramp	2,734	2,544	93%	63	13	B	4,375	4,166	95%	62	22	C
Calloway Drive on-ramp to Allen Road off-ramp	3,309	3,056	92%	62	16	B	5,390	5,094	95%	59	29	D
Allen Road off-ramp to Allen Road on-ramp	2,184	2,046	94%	64	11	A	3,265	3,119	96%	63	16	B
Allen Road on-ramp to West Beltway off-ramp	2,564	2,396	93%	62	13	B	3,700	3,549	96%	62	19	C
West Beltway off-ramp to West Beltway loop on-ramp	1,079	992	92%	64	8	A	1,510	1,441	95%	64	11	B
West Beltway loop on-ramp to West Beltway direct on-ramp	1,384	1,268	92%	62	10	A	1,960	1,815	93%	61	15	B
West Beltway direct on-ramp to Westside Parkway west end of the network	1,674	1,555	93%	60	13	B	2,320	2,173	94%	58	19	C
State Route 99 NB Collector-Distributor												
SR 99 NB C-D on-ramp to Westside Parkway C-D off-ramp	2,635	2,635	100%	53	17	B	2,520	2,434	97%	53	15	B
State Route 99 SB Collector-Distributor												
Westside Parkway C-D on-ramp to SR 99 SB C-D on-ramp	2,610	2,503	96%	46	18	C	2,860	2,860	100%	46	22	C
Westside Parkway EB Collector-Distributor												
Westside Parkway EB C-D on-ramp to SR 99 SB off-ramp	2,040	1,886	92%	52	15	B	2,355	2,315	98%	52	18	C
SR 99 SB off-ramp to SR 99 SB C-D on-ramp	600	577	96%	47	6	A	715	682	95%	47	7	A
SR 99 SB C-D on-ramp to Ming Avenue	1,440	1,418	98%	48	15	B	1,840	1,705	93%	48	18	B
		Bottleneck Location Queue										

Table 7. Alternative C Mainline Freeway Analysis Summary Results

Freeway Segment	ALT. C AM PEAK						ALT. C PM PEAK					
	Demand	Served	% Served	Speed	Density	LOS	Demand	Served	% Served	Speed	Density	LOS
	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)	(vph)	(vph)		(MPH)	(veh/ln/mi)	(HCM 2000)
SR-99 NB Mainline												
SR-99 NB south end of the network to White Ln Off Ramp	7,085	7,085	100%	62	29	D	6,680	6,680	100%	62	27	D
White Ln Off Ramp to White Ln Loop On Ramp	6,000	6,000	100%	61	24	C	5,575	5,524	99%	62	22	C
White Ln Loop On Ramp to White Ln Direct On Ramp	7,650	7,241	95%	45	40	E	7,210	6,578	91%	51	32	D
White Ln Direct On Ramp to Ming Ave Off Ramp	8,350	8,324	100%	58	36	E	7,890	7,598	96%	59	32	D
Ming Ave Off Ramp to Ming Ave On Ramp	7,455	7,455	100%	61	31	D	7,005	6,754	96%	61	28	D
Ming Ave On Ramp to SR58 EB Off Ramp	9,030	9,030	100%	59	31	D	8,525	8,291	97%	59	28	D
SR58 EB Off Ramp to SR99 NB C-D Off Ramp(WSP WB)	7,735	7,303	94%	60	27	D	7,090	6,490	92%	61	24	C
SR99 NB C-D Off Ramp(WSP WB) to California Ave Off Ramp	6,000	5,948	99%	61	24	C	5,220	5,112	98%	62	21	C
California Ave Off Ramp to SR99 NB C-D On Ramp(SR58WB&H St)	4,950	4,933	100%	59	21	C	4,565	4,404	96%	60	18	C
SR99 NB C-D On Ramp(SR58WB&H St) to California Ave Loop On Ramp	6,055	5,986	99%	60	25	C	5,695	5,493	96%	61	23	C
California Ave Loop On Ramp to California Ave Direct On Ramp	6,985	6,688	96%	58	29	D	7,005	6,287	90%	58	27	D
California Ave Direct On Ramp to Rosedale Hwy Off Ramp	7,420	7,057	95%	59	24	C	7,840	6,948	89%	58	24	C
Rosedale Hwy Off Ramp to Buck Owens Blvd/Sillect Ave Off Ramp	5,655	5,349	95%	61	22	C	6,170	5,380	87%	61	22	C
Buck Owens Blvd/Sillect Ave Off Ramp to Buck Owens Blvd/Sillect Ave On Ramp	4,840	4,595	95%	62	18	C	5,795	5,030	87%	62	20	C
Buck Owens Blvd/Sillect Ave On Ramp to Airport Dr Off Ramp	5,515	5,253	95%	59	22	C	6,550	5,747	88%	59	24	C
Airport Dr Off Ramp to SR99 NB north end of the network	3,755	3,518	94%	63	14	B	5,130	4,482	87%	62	18	B
SR-99 SB Mainline												
SR 99 SB north end of the network to Airport Drive on-ramp	3,980	3,980	100%	64	16	B	4,795	4,795	100%	63	19	C
Airport Drive on-ramp to Rosedale Highway off-rRamp	5,390	5,314	99%	60	21	C	6,850	6,850	100%	55	31	D
Rosedale Highway off-ramp to Rosedale Highway loop on-ramp	4,030	4,009	99%	63	16	B	5,550	5,550	100%	60	24	C
Rosedale Highway loop on-ramp to Rosedale Highway direct on-ramp	5,120	5,120	100%	55	20	C	6,920	6,920	100%	43	36	E
Rosedale Highway direct on-ramp to California Avenue off-ramp	5,770	5,770	100%	58	24	C	7,980	7,980	100%	41	48	F
California Avenue off-ramp to California Avenue on-ramp	4,355	4,355	100%	62	18	B	6,355	6,354	100%	60	27	D
California Avenue on-ramp to SR 58 EB off-ramp	4,880	4,880	100%	62	16	B	7,300	7,177	98%	61	24	C
SR58 EB off-ramp to SR 99 SB off-ramp (Ming Avenue)	3,960	3,935	99%	62	16	B	5,910	5,815	98%	61	24	C
SR 99 SB off-ramp (Ming Avenue) to SR 99 SB on-ramp (Westside Parkway EB and SR 58 WB and H Street)	3,160	3,118	99%	63	12	B	4,795	4,763	99%	61	19	C
SR 99 SB on-ramp (Westside Parkway EB and SR 58 WB and H Street) to Ming Avenue on-ramp	5,609	5,509	98%	61	18	B	7,535	7,465	99%	61	24	C
Ming Avenue on-ramp to White Lane off-ramp	6,404	6,284	98%	58	26	C	8,375	8,224	98%	39	55	F
White Lane off-ramp to White Lane loop on-ramp	4,719	4,653	99%	62	19	C	6,355	6,244	98%	61	26	C
White Lane loop on-ramp to White Lane direct on-ramp	4,979	4,766	96%	62	19	C	6,920	6,732	97%	61	28	D
White Lane direct on-ramp to SR 99 SB south end of the network	5,246	5,063	97%	62	20	C	7,333	7,116	97%	61	29	D
WSP EB Mainline												
WSP west end of the network to West Beltway Off Ramp	2,215	2,215	100%	46	25	C	2,210	2,210	100%	46	27	D
West Beltway Off Ramp to West Beltway Loop On Ramp	1,530	1,517	99%	60	13	B	1,360	1,318	97%	60	11	A
West Beltway Loop On Ramp to West Beltway Direct On Ramp	3,005	2,966	99%	61	16	B	2,685	2,608	97%	61	14	B
West Beltway Direct On Ramp to Allen Rd Off Ramp	3,285	3,209	98%	62	17	B	2,940	2,850	97%	63	15	B
Allen Rd Off Ramp to Allen Rd On Ramp	2,925	2,843	97%	63	15	B	2,645	2,547	96%	63	13	B
Allen Rd On Ramp to Calloway Dr Off Ramp	4,915	4,870	99%	60	27	D	4,465	4,383	98%	61	24	C
Calloway Dr Off Ramp to Calloway Dr Loop On Ramp	3,940	3,940	100%	63	21	C	3,640	3,631	100%	63	19	C
Calloway Dr Loop On Ramp to Calloway Dr Direct On Ramp	4,860	4,806	99%	59	27	D	4,605	4,525	98%	59	25	C
Calloway Dr Direct On Ramp to Coffee Dr Off Ramp	5,960	5,960	100%	60	32	D	5,690	5,652	99%	61	30	D
Coffee Dr Off Ramp to Coffee Dr Loop On Ramp	4,910	4,872	99%	62	26	D	4,815	4,815	100%	62	26	C
Coffee Dr Loop On Ramp to Coffee Dr Direct On Ramp	5,860	5,811	99%	62	24	C	5,885	5,885	100%	61	24	C
Coffee Dr Direct On Ramp to Mohawk St Off Ramp	6,935	6,878	99%	55	31	D	6,995	6,995	100%	56	31	D
Mohawk St Off Ramp to Mohawk St On Ramp	5,045	5,009	99%	61	27	D	5,295	5,287	100%	61	29	D
Mohawk St On Ramp to Truxtun Ave Off Ramp	5,520	5,471	99%	60	23	C	6,345	6,279	99%	58	29	D
Truxtun Ave Off Ramp to SR99 SB C-D Off Ramp(SR99 SB&Ming Ave)	3,970	3,899	98%	62	21	C	4,950	4,940	100%	61	27	D
SR99 SB C-D Off Ramp(SR99 SB&Ming Ave) to H St Off Ramp	2,025	1,964	97%	63	16	B	2,605	2,486	95%	63	20	C
H St Off Ramp to Real Rd On Ramp	1,685	1,652	98%	63	13	B	2,248	2,132	95%	63	17	B
Real Rd On Ramp to SR 99 NB&SB On Ramp	2,663	2,560	96%	60	22	C	3,228	2,896	90%	58	25	C
SR99 NB&SB On Ramp to Chester Ave On Ramp	4,535	4,535	100%	62	18	C	5,665	5,332	94%	61	22	C
Chester Ave On Ramp to Union Ave Off Ramp	5,185	5,185	100%	61	21	C	6,580	6,236	95%	59	26	D
Union Ave Off Ramp to Union Ave Loop On Ramp	4,135	4,135	100%	62	22	C	5,215	4,939	95%	62	27	D
Union Ave Loop On Ramp to Union Ave Direct On Ramp	4,435	4,434	100%	62	24	C	5,825	5,471	94%	60	31	D
Union Ave Direct On Ramp to Cottonwood Rd Off Ramp	4,725	4,715	100%	61	26	C	6,375	6,054	95%	59	34	D
Cottonwood Rd Off Ramp to Cottonwood Rd On Ramp	4,080	4,058	99%	62	22	C	5,315	5,014	94%	62	27	D
Cottonwood Rd On Ramp to SR58 east end of the network	4,390	4,344	99%	62	23	C	5,590	5,246	94%	61	29	D
WSP WB Mainline												
SR 58 east end of the network to Cottonwood Road off-ramp	5,245	5,245	100%	63	28	D	5,145	5,145	100%	63	28	D
Cottonwood Road off-ramp to Cottonwood Road on-ramp	5,045	5,017	99%	62	27	D	4,870	4,870	100%	62	26	D
Cottonwood Road on-ramp to Brundage Lane off-ramp	5,420	5,372	99%	61	30	D	5,455	5,394	99%	61	30	D
Brundage Lane off-ramp to Brundage Lane on-ramp	4,595	4,592	100%	61	25	C	4,780	4,705	98%	61	26	C
Brundage Lane on-ramp to Union Avenue on-ramp	5,095	4,984	98%	60	28	D	5,190	5,047	97%	60	28	D
Union Avenue on-ramp to Chester Avenue off-ramp	5,865	5,784	99%	60	24	C	5,900	5,713	97%	59	33	D
Chester Avenue off-ramp to SR 58 WB C-D off-ramp (SR 99 NB and SB and Real Road)	5,040	4,792	95%	59	23	C	5,195	4,847	93%	60	24	C
SR 58 WB C-D off-ramp (SR 99 NB and SB and Real Road) to SR 99 NB C-D on-ramp (SR 99 NB and H Street)	1,785	1,785	100%	63	14	B	1,865	1,826	98%	63	15	B
SR99 NB C-D on-ramp (SR 99 NB and H Street) to Mohawk Street off-ramp	4,171	4,171	100%	59	24	C	4,440	4,290	97%	59	24	C
Mohawk Street off-ramp to Truxtun Avenue on-ramp	3,281	3,266	100%	61	27	D	3,650	3,563	98%	61	29	D
Truxtun Avenue on-ramp to Mohawk Street loop on-ramp	4,281	4,235	99%	61	23	C	5,525	5,432	98%	60	30	D
Mohawk Street loop on-ramp to Mohawk Street direct ramp	4,906	4,853	99%	62	20	C	6,730	6,652	99%	61	27	D
Mohawk Street direct ramp to Coffee Drive off-ramp	5,716	5,378	94%	61	20	C	7,705	7,235	94%	59	28	D
Coffee Drive off-ramp to Coffee Drive loop on-ramp	3,546	3,522	99%	63	14	B	5,595	5,546	99%	62	22	C
Coffee Drive loop on-ramp to Coffee Drive direct on-ramp	3,726	3,656	98%	63	14	B	5,895	5,814	99%	62	23	C
Coffee Drive direct on-ramp to Calloway Drive direct off-ramp	4,036	3,903	97%	63	15	B	6,490	6,351	98%	61	25	C
Calloway Drive direct off-ramp to Calloway Drive loop off-ramp	3,451	3,335	97%	62	13	B	5,540	5,402	98%	61	22	C
Calloway Drive loop off-ramp to Calloway Drive on-ramp	2,726	2,656	97%	63	14	B	4,275	4,162	97%	62	22	C
Calloway Drive on-ramp to Allen Road off-ramp	3,276	3,168	97%	62	17	B	5,330	5,180	97%	59	29	D
Allen Road off-ramp to Allen Road on-ramp	2,136	2,064	97%	64	11	A	3,230	3,179	98%	63	17	B
Allen Road on-ramp to West Beltway off-ramp	2,506	2,419	97%	62	13	B	3,675	3,577	97%	61	19	C
West Beltway off-ramp to West Beltway loop on-ramp	1,021	990	97%	64	8	A	1,455	1,440	99%	64	11	B
West Beltway loop on-ramp to West Beltway direct on-ramp	1,321	1,269	96%	62	10	A	1,930	1,855	96%	61	15	B
West Beltway direct on-ramp to Westside Parkway west end of the network	1,616	1,549	96%	60	13	B	2,305	2,202	96%	57	19	C
State Route 99 NB Collector-Distributor												
SR 99 NB C-D on-ramp to SR 99 NB C-D off-ramp	3,490	3,490	100%	53	22	C	3,705	3,548	96%	52	23	C
State Route 99 SB Collector-Distributor												
SR 58 WB C-D on-ramp to SR 99 SB C-D off-ramp	3,320	3,236	97%	52	21	C	3,675	3,638	99%	52	24	C
SR 99 SB C-D off-ramp to SR 99 SB C-D on-ramp	870	840	97%	49	17	B	935	898	96%	49	18	C
SR 99 SB C-D on-ramp to Ming Avenue off-ramp	1,670	1,664	100%	48	17	B	2,050	1,965	96%	48	20	C
State Route 58 WB Collector-Distributor												
SR 58 WB C-D on-ramp to SR 99 NB C-D off-ramp	3,905	3,793	97%	52	24	C	4,035	3,901	97%	52	25	C
SR 99 NB C-D off-ramp to SR 99 SB off-ramp	2,150	2,120	99%	51	21	C	2,200	2,100	95%	51	20	C
SR 99 SB off-ramp to Real Road off-ramp	775	775	100%	49	8	A	870	870	100%	49	9	A
		Bottleneck Location Queue										

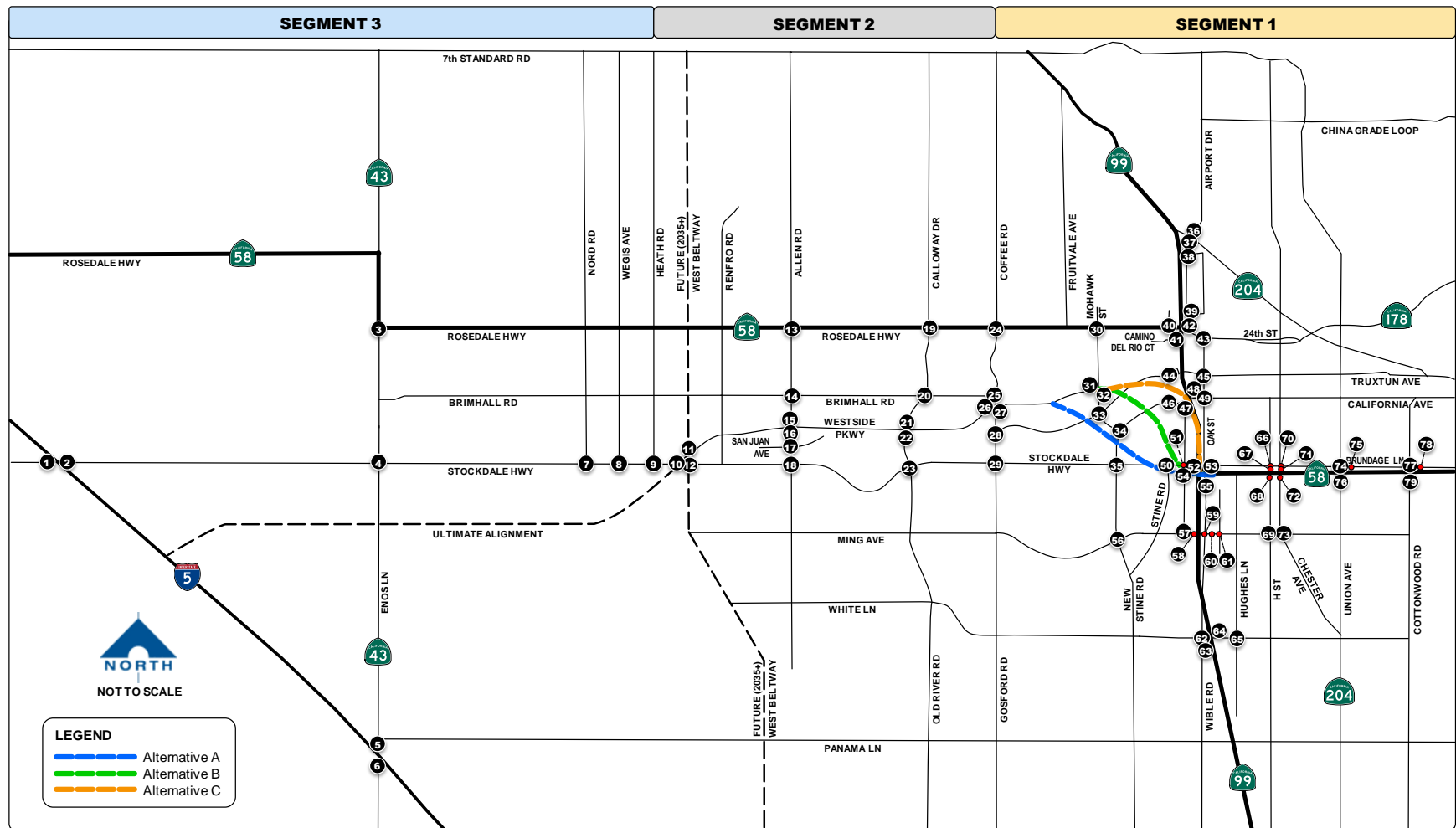


Figure 11. Location Map of Study Intersections

Table 8. Existing versus Year 2038 Comparison of Intersection Level of Service

Current Int. Number	Intersection	Type of Control	Existing (Source: F&P Associates, Inc Reported Synchro ver. 6 results)				Design Year 2038 No-Build Condition				Design Year 2038 Alternative A				Design Year 2038 Alternative B				Design Year 2038 Alternative C			
			AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	I-5 SB Ramps/Stockdale Highway	NB/SB TWSC	B	10.2	C	15.1	A	6.4	F	92.0	A	5.3	F	66.3	A	5.7	F	69.0	A	5.4	F	52.1
		Imp-Signal	N/A				B	12.2	B	11.6	B	11.4	B	11.2	B	11.7	B	11.3	B	11.7	B	11.3
2	I-5 NB Ramps/Stockdale Highway	NB/SB TWSC	A	9.5	B	11.7	A	4.0	B	14.0	A	7.2	B	16.8	A	6.1	B	19.9	A	4.0	B	11.6
3	SR-43 (Enos Lane)/Rosedale Highway	4-way Stop	B	12.0	B	14.9	D	25.8	F	77.0	D	28.5	F	81.9	D	28.4	F	78.7	D	28.1	F	83.1
		Imp-Signal	N/A				N/A				C	26.8	C	32.6	C	26.0	C	32.8	C	26.9	C	33.0
4	SR-43 (Enos Lane)/Stockdale Highway	4-way Stop	B	14.9	D	31.7	F	>150	F	>150	F	>150	F	>150	F	>150	F	>150	F	>150	F	>150
		Imp-Signal	N/A				C	24.2	C	23.0	B	15.5	C	22.1	B	17.0	C	23.7	B	15.9	C	29.8
5	SR-43 (Enos Lane)/I-5 NB Ramps	EB/WB TWSC	B	11.9	C	15.6	A	3.4	B	10.7	A	4.3	B	10.1	A	3.7	B	14.6	A	3.3	B	13.5
6	SR-43 (Enos Lane)/I-5 SB Ramps	EB/WB TWSC	B	14.5	D	26.9	A	5.7	C	19.8	A	4.1	C	21.2	A	3.9	C	21.9	A	4.6	C	18.1
7	Stockdale Highway/Nord Rd	Signal	N/A				C	31.8	C	29.1	C	34.5	C	32.4	C	31.8	C	28.2	C	34.6	C	22.1
8	Stockdale Highway/Wegis Avenue	NB/SB TWSC	N/A				F	>150	F	>150	F	>150	F	>150	F	>150	F	>150	F	>150	F	>150
		Imp-Signal	N/A				C	21.5	C	23.2	C	31.3	C	30.7	C	30.9	C	28.6	C	27.7	C	33.0
9	Stockdale Highway/Heath Road	STOP-Existing SIGNAL-Future	C	18.2	C	22.2	C	29.2	C	27.6	C	23.8	C	26.7	C	25.5	C	26.6	C	28.5	C	23.6
10	Stockdale Highway/WSP	Signal	Does not Exist				A	7.6	A	9.0	A	9.0	A	8.3	A	8.4	A	7.8	A	9.5	A	6.4
11	West Beltway/WSP WB Ramp	Signal	Does not Exist				A	6.5	B	14.7	A	8.5	B	17.2	A	7.4	B	19.5	A	9.6	B	16.3
12	West Beltway/WSP EB Ramp	Signal	Doesn't Exist				B	11.2	B	18.2	A	8.3	B	15.3	A	8.8	B	13.7	A	7.9	B	14.2
13	Allen Road/Rosedale Highway	Signal	D	37.3	E	76.9	D	40.7	D	47.1	D	36.1	D	48.0	D	37.5	D	47.7	D	36.2	D	47.3
14	Allen Road/Brimhall Rd	Signal	C	21.2	B	19.9	C	25.9	C	33.5	C	23.5	C	34.4	C	23.1	C	33.1	C	26.9	C	27.8
15	Allen Road/WSP WB Ramps	Signal	Does not Exist				B	15.0	C	28.0	B	17.5	C	29.3	B	17.2	C	30.1	B	19.3	C	20.5
16	Allen Road/WSP EB Ramps	Signal	Does not Exist				B	10.2	A	3.7	B	10.9	B	11.5	B	10.2	B	12.3	B	17.1	B	13.8
17	Allen Road/San Juan Avenue	Signal	Does not Exist				C	22.8	C	26.5	C	22.8	C	25.0	C	22.2	C	25.6	C	22.8	C	22.3
18	Allen Road/Stockdale Highway	Signal	D	39.0	C	27.0	C	29.8	C	32.5	C	31.1	C	33.0	C	30.0	C	33.7	C	33.6	C	28.1
19	Calloway Drive/Rosedale Highway	Signal	E	69.0	F	91.0	D	49.4	D	54.8	E	59.2	E	58.6	E	55.6	E	63.2	E	59.7	E	61.8
20	Calloway Drive/Brimhall Road	Signal	C	31.9	C	25.4	C	29.9	C	28.5	C	29.8	C	35.0	C	34.9	C	33.2	C	31.7	C	31.2
21	Calloway Drive/WSP WB Ramps	Signal	Does not Exist				B	10.8	C	20.5	B	19.2	C	28.3	B	13.1	C	25.6	B	14.2	C	20.2
22	Calloway Drive/WSP EB Ramps	Signal	Does not Exist				B	18.4	A	8.9	B	11.2	A	7.5	B	15.9	A	8.9	B	13.5	A	8.7
23	Calloway Drive/Stockdale Highway	Signal	D	36.1	D	38.5	D	52.3	D	39.7	D	42.9	D	37.0	D	44.9	D	38.2	D	44.0	D	35.9
24	Coffee Road/Rosedale Highway	Signal	E	75.7	E	65.7	F	83.1	F	98.0	E	79.4	F	97.1	E	67.1	F	134.5	E	69.7	F	110.3
25	Coffee Road/WSP WB Ramp-Brimhall Road	Signal	E	60.1	E	72.7	C	27.3	D	43.2	C	32.0	C	31.6	C	30.9	C	31.9	C	27.6	C	31.1
26	Coffee Road/WSP WB On Ramp	Unsignalized	Does not Exist				N/A				N/A				N/A				N/A			
27	Coffee Road/WSP EB Ramps	Signal	Does not Exist				C	28.7	B	19.0	B	18.2	B	11.0	B	18.1	B	14.3	B	11.1	B	14.1
28	Coffee Road/Truxtun Ave	Signal	E	67.2	F	81.2	C	20.5	C	24.5	B	12.4	B	18.5	B	13.4	B	16.7	B	12.5	B	17.8
29	Coffee Road/Stockdale Hwy	Signal	F	112.0	F	90.2	E	55.6	F	99.2	E	67.1	F	84.0	E	57.1	F	82.8	E	69.9	F	86.7
30	Mohawk Street/Rosedale Highway	Stop, Existing* Signal-Future	F	62.4	F	53.2	F	103.6	F	123.2	E	78.8	F	108.2	E	73.1	F	99.5	E	76.8	F	96.7
31	Mohawk Street/WSP WB Ramps	Signal	Does not Exist				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	B	10.9	A	8.9	B	11.4	A	8.0
32	Mohawk Street/WSP EB Ramps	Signal	Does not Exist				C	24.4	B	19.5	B	11.8	B	13.8	B	18.3	B	12.3	B	18.2	B	14.4
33	Mohawk Street/Truxtun Avenue	Signal	C	29.0	D	41.5	C	31.1	E	59.8	C	26.4	C	25.5	C	33.6	C	28.8	C	33.5	C	29.7
34	Mohawk Street/California Avenue	Signal	C	30.5	C	34.3	F	105.5	F	175.0	D	37.1	E	70.3	D	40.6	E	62.4	D	35.2	E	65.6
35	Stockdale Hwy/California Avenue	Signal	E	55.9	F	81.9	F	94.5	F	104.3	D	43.3	E	62.5	D	46.2	E	60.1	D	44.0	E	60.9
36	Airport Drive/State Rd-SR-204 Off	Signal	D	35.9	D	42.5	C	20.2	C	21.9	C	22.2	C	22.6	C	21.9	C	26.7	C	21.5	C	21.9
37	Airport Drive/SR-99 NB Ramp	Signal	A	8.8	C	21.9	A	7.1	B	10.6	A	9.5	B	11.6	A	9.1	B	12.0	A	8.9	B	11.0
38	Buck Owens Boulevard/Rio Mirada Drive	Signal	D	43.7	B	17.8	C	29.1	C	28.6	C	21.7	C	25.0	C	30.9	C	29.4	C	32.6	C	27.5
39	SR99 NB Ramps/Buck-Owens Boulevard	Signal	D	38.9	D	37.5	D	37.5	D	46.2	D	41.7	D	43.4	D	45.3	D	42.3	D	42.4	D	42.6
40	Rosedale Highway/Camino Del Rio Court	Signal	C	28.6	D	37.0	C	20.9	D	49.9	C	30.4	D	49.4	C	33.7	D	45.3	C	32.8	D	46.4
41	Rosedale Highway/SR 99 SB Ramps	Signal	D	41.0	D	44.5	C	22.7	D	37.6	C	21.2	C	21.8	C	20.5	C	20.9	C	20.7	C	22.6
42	Rosedale Highway/SR99 NB Ramps	Signal	D	50.9	F	125.6	C	26.6	C	30.0	C	33.2	D	42.9	C	24.2	D	36.3	C	26.1	D	37.7
43	24th Street/Oak Street	Signal	F	89.4	F	100.3	D	37.5	C	29.5	C	31.3	D	38.4	C	33.2	D	39.0	C	30.4	D	36.9
44	Truxtun Avenue/Empire Drive	Signal	N/A				C	21.6	D	47.6	C	29.4	D	42.5	C	30.0	D	52.4	c	29.7	D	47.6
45	Truxtun Avenue/Oak Street	Signal	D	43.3	E	74.4	E	61.9	E	73.9	D	52.0	D	46.3	D	52.7	D	45.3	D	51.8	D	48.1
46	California Avenue/Chester Lane	Signal	B	17.5	C	27.8	C	23.7	C	30.1	C	20.2	F	130.7	C	28.7	F	123.6	C	21.1	F	121.3
47	California Avenue/SR99 SB Ramps	Signal	D	48.8	D	44.5	D	54.6	E	76.1	E	57.8	F	90.3	E	60.1	F	83.2	E	58.9	F	83.2
48	California Avenue/SR99 NB Ramps	Signal	E	74.8	C	25.1	C	28.5	D	51.5	C	32.5	C	25.9	C	28.1	C	21.2	C	30.7	C	24.5
49	California Avenue/Oak St	Signal	D	44.1	E	78.7	C	28.3	E	61.5	C	29.7	E	58.6	C	27.5	E	57.9	C	28.2	E	58.1
50	Stockdale Highway/Stine Road	Signal	N/A				F	90.7	F	>150	D	36.1	F	90.0	D	38.7	F	83.8	D	35.9	F	94.0
51	Stockdale Highway/Real Road	Signal	F	95.8	F	93.2	D	48.3	F	94.0	D	36.0	D	53.1	D	42.8	D	50.7	D	45.2	F	91.3
52	Stockdale Highway/SR99 SB Ramp	Signal	B	12.2	B	10.5	B	16.8	B	18.0	Intersection does not exist in Alternative											
53	Brundage Lane/Oak Street	Signal	C	28.9	D	38.8	C	31.9	D	40.3	C	25.9	C	30.4	C	25.3	C	31.4	C	29.9	C	30.6
54	Real Road/SR58	Signal	C	27.0	C	27.3	C	21.8	D	39.3	Intersection does not exist in Alternative											
55	Wible Road/SR99 NB Ramps	Signal	B	17.9	C	32.2	B	15.5	C	28.4	Intersection does not exist in Alternative											
5																						

personnel will be necessary to ensure quick response times. Disruptions in access to local schools are expected to be very minimal, with safe and efficient alternatives to currently used routes readily available.

Local roadway and freeway access modifications and their ramifications for local circulation, emergency and health services provision, and the location of schools for each of the build alternatives are summarized below. Figure 12 illustrates the general study area, depicting the locations where access modifications will be required. It should be noted that a portion of the affected areas east of Oleander Drive and south of Belle Terrace are not visible on this map, but the streets involved are discussed below. The location and proposed treatment of each affected local street can be seen in layout drawings provided in the full body of the *Centennial Corridor Traffic Study* report.

Alternative A—Street Closures and General Circulation

NORTH OF STATE ROUTE 58

On the north side of State Route 58, the following existing through streets will be terminated or converted to cul-de-sacs just north of the proposed right-of-way:

- Jones Street
- Williamson Way
- McDonald Way
- Business Park South

Jones Street will be closed both south of Stockdale Highway and north of Peckham Avenue. Nearby north–south access is available at Stine Road. Williamson Way will be also closed south of the proposed roadway. Nearby north–south access is available at Real Road. Existing north–south traffic on McDonald Way will be diverted to Cunan Street to the east and South Montclair Street to the west. Business Park South will be shortened to the north to accommodate the roadway project and traffic will be diverted to adjacent Business Center Drive.

SOUTH OF STATE ROUTE 58

On the south side of State Route 58, the following existing through streets will be terminated or converted to a cul-de-sac just south of the proposed right-of-way:

- Jones Street
- South Gamsey Avenue
- Williamson Way
- Myrtle Street
- Dixon Avenue
- Frazier Avenue
- Westwood Street
- McDonald Way
- Brite Street
- South Oleander Avenue
- Houchin Road

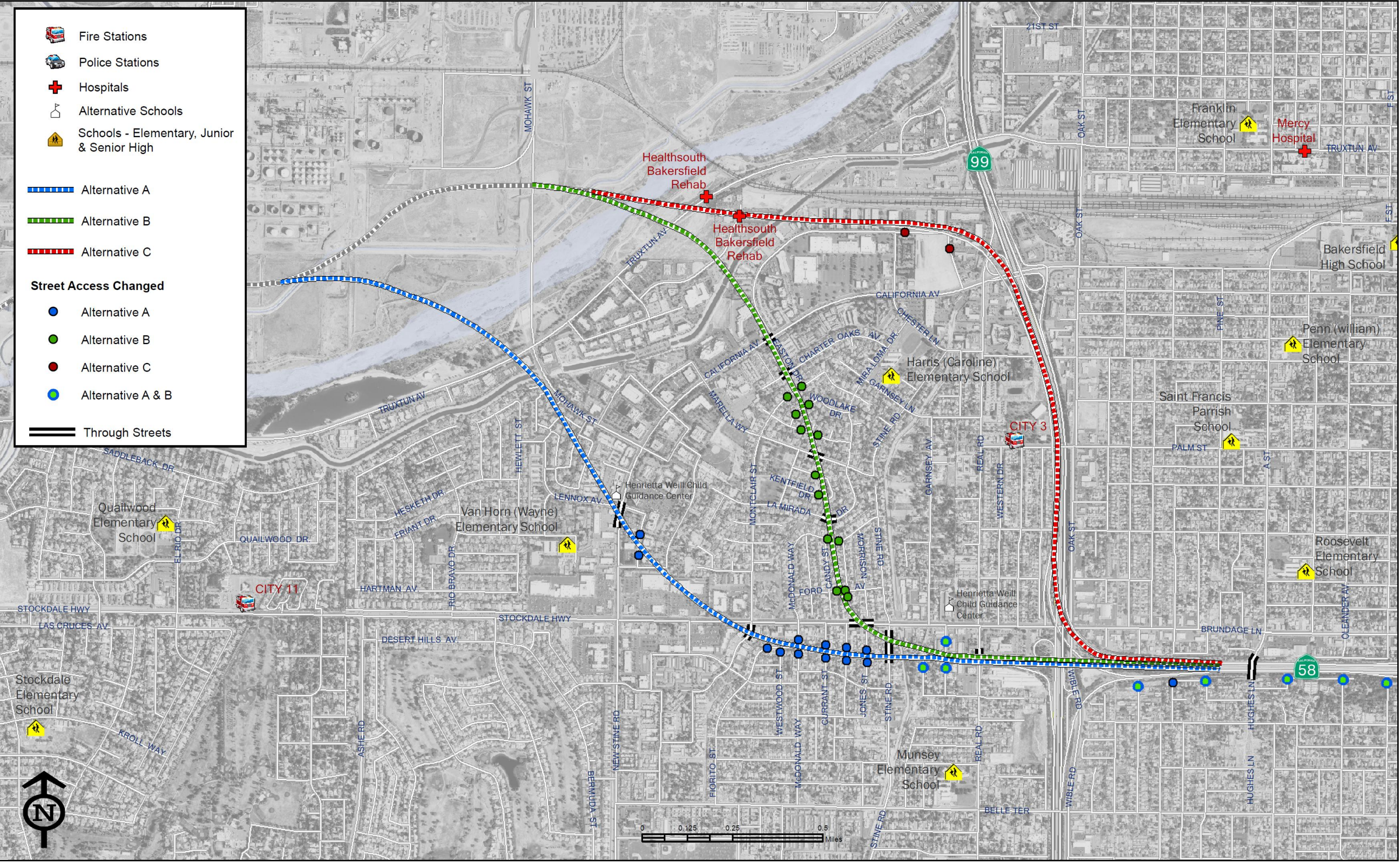


Figure 12. Local Roadway Access Modifications

Stine Road will continue as a through street, forming an underpass at the proposed roadway. Real Road will form a traffic-divided underpass of the mainline, in addition to the eastbound on-ramps and westbound off-ramps of the proposed highway. South Gamsey Avenue is an existing cul-de-sac which will be shortened to accommodate the roadway right-of-way. Myrtle Street and Dixon Avenue are currently linked at their northern termini by a connecting street. The street will be eliminated and converted to a cul-de-sac to accommodate the proposed roadway. Both streets will be minimally affected in terms of circulation due to nearby Hughes Lane, which will continue as a major through street. Frazier Avenue and Westwood Street will be terminated but the connecting street between the two will be retained. McDonald Way will be terminated and traffic diverted east to become Peckham Avenue. North-south traffic will be served by South Montclair Street to the east and Stine Road to the west. Brite Street, an east-west street, will be terminated and the connecting road between Brite Street and South Oleander Avenue eliminated. The existing Houchin Road cul-de-sac will be moved slightly to the south to accommodate the proposed roadway. North-south traffic will still access H Street as currently used.

WEST OF STATE ROUTE 99

On the west side of State Route 99, the following existing streets will be terminated just west of State Route 99:

- Wood Lane
- Laverne Avenue

Eastbound traffic on Wood Lane and Laverne Avenue has access to Belle Terrace or Ming Avenue, streets in close proximity which provide through movements east of State Route 99. Seville Street will be extended north, just past Laverne Avenue, to serve existing properties. A frontage road connection between Mona Way and Belle Terrace will be established. Belle Terrace will form an underpass of State Route 99. Affects on circulation in this area will be very limited.

Alternative B—Street Closures and General Circulation

NORTH OF STATE ROUTE 58

On the north side of State Route 58, the following existing through streets will be terminated just north of the proposed right-of-way:

- Kentfield Drive
- Hillsborough Drive

Southbound traffic on Kentfield Drive and Hillsborough Drive will be diverted a short distance east or west to Marella Way or La Mirada Drive, both of which provide through movements via underpasses of the proposed roadway.

SOUTH OF STATE ROUTE 58

On the south side of State Route 58, the following existing through streets will be terminated or converted to a cul-de-sac just south of the proposed right-of-way:

- South Myrtle Street
- South Gamsey Avenue

- Kensington Avenue
- Woodlake Drive
- Montclair Street
- Charter Oaks Avenue
- Dixon Avenue
- Brite Street
- South Oleander Avenue
- Houchin Road

Stine Road and Williamson Way, one street on either side of South Gamsey Avenue, will remain as north–south through streets and retain easy access north to Stockdale Highway. Real Road will remain as a major north–south divided collector roadway. Northbound traffic on Kensington Avenue, Woodlake Drive, Montclair Street, and Charter Oaks Avenue will be diverted either east or west to California Avenue or either Marella Way or La Mirada Drive, respectively. California Avenue will remain as a major north–south divided arterial roadway. Brite Street, an east–west street, will be terminated and the connecting road between Brite Street and South Oleander Avenue eliminated. Northbound traffic on Dixon Avenue will be directed one block east to Hughes Lane. Northbound traffic on South Oleander Avenue and Houchin Road will be diverted to H Street, one and two blocks to the east, respectively. Hughes Lane, H Street, Chester Avenue, and South P Street will remain as north–south arterial roadways serving the City of Bakersfield.

WEST OF STATE ROUTE 99

On the west side of State Route 99, the following existing through streets will be terminated just west of State Route 99:

- Wood Lane
- Laverne Avenue

Seville Street will be extended north just past Laverne Avenue to serve existing properties. A frontage road connection between Mona Way and Belle Terrace will be established. Belle Terrace will form an overpass of State Route 99. The existing Wood Lane cul-de-sac will be moved slightly to the west. North–south through access will remain at Belle Terrace.

Alternative C—Street Closures and General Circulation

WEST OF STATE ROUTE 99

On the west side of State Route 99, the following existing streets will be terminated just west of State Route 99:

- Chester Lane
- Elcia Drive
- Terrace Way
- Wood Lane

Chester Lane currently forms a cul-de-sac at its eastern-most terminus, just west of State Route 99. Traffic circulation will not be affected as the two streets on either side of Chester Lane

(California Avenue and Palm Street) provide east–west through access. Elicia Drive and Terrace Way, two adjacent and parallel streets will be connected just west of State Route 99 to provide circulation for adjacent properties. A frontage road connection between Mona Way and Belle Terrace will be established. Belle Terrace will form an overpass of State Route 99. The existing cul-de-sac on Wood Lane will be moved slightly to the west. North–south through access will remain at Belle Terrace.

SOUTH OF STATE ROUTE 58

On the south side of State Route 58, an existing street, Commerce Drive, will be converted to a cul-de-sac just south of the proposed right-of-way. Commerce Drive currently ends in a cul-de-sac south of Truxtun Avenue. Commerce Drive will be terminated farther to the south in order to accommodate the proposed roadway right-of-way, but neither circulation nor access is affected.

Emergency Service Access

In the case of alternative A, one health care center (HealthSouth Bakersfield Rehab) and two fire stations (City 3 and City 11) are located within the immediate vicinity of the proposed right-of-way. In the case of alternatives B and C, one health care center (HealthSouth Bakersfield Rehab) and one fire station (City 3) are located within the immediate vicinity of the proposed right-of-way.

In each case, the expected change as a result of the proposed project in existing local circulation patterns will be minimal and will not unduly affect traffic or the provision of local emergency services. Service provision from the closest police station, Bakersfield Central Receiving Station at 1415 Truxtun Avenue, is not expected to be affected.

Access to Schools

Two schools, Van Horn Elementary and Henrietta Well Child Guidance Center are in the immediate vicinity of the alternative A right-of-way. Two schools, Harris Elementary and Henrietta Well Child Guidance Center, are in the immediate vicinity of the alternative B right-of-way. In each case, at least some students will be forced to access the school via a nearby local alternative to the route currently used. Because the actual closures of streets are minimal and the opportunities for alternate access readily available, however, situations are not expected in which functional access to any of these facility would be materially affected.

Based on the location of schools in the vicinity of alternative C construction, no changes in access for students are expected.

Freeway Access Modifications

Modifications to existing access ramps along State Route 99 and State Route 58 are required as part of the project and will impact travel access. Impacts will differ in degree depending on the alternative and location examined.

Freeway access modifications resulting from the proposed project are not expected to impact the provision of public safety services, such as fire or police, or affect access to health care facilities. Minor re-routing adjustments with respect to call response and patrol duties for fire and police personnel will be necessary to ensure quick response times. Disruptions in access to local schools are expected to be very minimal, with safe and efficient alternatives to currently used routes readily available.

Freeway access modifications and their ramifications for local circulation and alternative travel route recommendations are summarized below:

- The southbound State Route 99 off-ramp with direct access to Stockdale Highway will be eliminated under **alternatives A, B and C**. The provided alternative will be for vehicles to exit instead at the California Avenue interchange, just to the north. California Avenue and Oak Street provide a direct connection with the Stockdale Highway corridor.
- The northbound State Route 99 exit and entrance access points to and from Wible Road will be eliminated under **alternatives A, B and C**. Under existing and no-build conditions, these ramps provide access to and from the Stockdale Highway corridor. The provided alternative will be for vehicles to utilize either the California Avenue interchange to the north or the Ming Avenue interchange to the south, depending upon their destination.
- Access from Real Road and the Stockdale Highway corridor to southbound State Route 99 will be eliminated under **alternatives A, B and C**. The available alternative will be for drivers to utilize Real Road or Stine Road to access southbound State Route 99 via the Ming Avenue interchange.
- The connection between westbound State Route 58 to Real Road and the Stockdale Highway corridor will be eliminated under **alternatives A and B**, only. The likely alternative is for drivers to utilize the H Street/Chester Avenue interchange. The next nearest intersection to the north would be Calloway Drive in the case of alternative A, and Mohawk Street in the case of alternative B.
- Ming Avenue corridor access to and from State Route 58, east of State Route 99, will be eliminated under **alternatives A and B**, only. The area is characterized by relatively heavy traffic associated with movements to and from the Valley Plaza Mall and other nearby retail businesses. The provided alternative will be for vehicles to utilize the Chester Avenue interchange.
- Access from westbound State Route 58 to California Avenue via State Route 99 will be eliminated under **alternative C**, only. Drivers will instead be required to utilize Chester Avenue or H Street to access California Avenue to the north.

Future Projects and Interim Conditions

The future year transportation networks assume a large number of highway and transit elements listed in the 2011 Regional Transportation Plan (Amendment 1) which are “constrained” by funding that is currently available or reasonably projected to be available by the opening (2018) and design year (2038) analysis scenarios. In addition to these constrained projects, two “unconstrained” (unfunded) projects have been considered by this traffic study:

1. The construction of Segment 3 of the Centennial Corridor from the west end of the Westside Parkway to Interstate 5
2. The construction of Segment 1 freeway-to-freeway connector ramps between State Route 58 (west) and State Route 99 north.

These future projects and interim conditions are discussed below.

Segment 3—Heath Road to Interstate 5

The limits of Segment 3 were previously illustrated on Figure 7. The ultimate alignment is proposed as a new 7.4-mile-long freeway that would follow an east–west alignment parallel to the Cross Valley Canal. The route would be about one-third mile south of Stockdale Highway from Heath Road to about 1.2 miles west of State Route 43. The alignment would continue to follow the canal in a southwest direction and connect to Interstate 5 at a new freeway-to-freeway interchange located two miles south of the Stockdale Highway/Interstate 5 interchange. Segment 3 was evaluated in the approved *Route 58 Route Adoption Project, A Tier I Environmental Impact Statement/ Environmental Impact Report* (Caltrans, 2001). A Tier I document shows a general alignment and identifies impacts at a conceptual level and is done when there is not full funding for the improvements. An alignment known as the Cross Valley Canal alignment was identified as the “least environmentally damaging practicable alternative.” Segment 3 will remain at the Tier I, route-adoption level of analysis until there is sufficient funding for construction. At that time, a project-level environmental document will be prepared.

In the interim, Stockdale Highway, from the Westside Parkway to Interstate 5, would be temporarily adopted as State Route 58, under build alternatives A, B and C. Under the no-build and transportation system management alternatives, State Route 58 would remain on its currently alignment. With build alternatives A, B, and C, improvements would be required at the Stockdale Highway and State Route 43 (Enos Lane) intersection. The proposed improvements would widen the intersection along all approaches and add signals to control the traffic movements. Enos Lane would be widened to add a dedicated left-turn lane and a shared through/right-turn lane in both directions. Stockdale Highway would be widened to provide a dedicated left-turn lane, a dedicated through movement lane, and a shared through/right-turn lane in both directions. Though physically located in Segment 3, these improvements would be built as part of segment 1 to ensure adequate traffic operations at this intersection.

In addition to these project related improvements at Stockdale Highway and Enos Lane, land developer improvements are assumed under no-build and build alternatives A, B, and C as a condition of entitlement. These land development conditions of approval call for the widening of Stockdale Highway to four lanes from Nord Road to Enos Lane and the installation of traffic signals and intersection improvements at Stockdale Highway and Wegis Avenue and at Stockdale Highway and Nord Road. These intersection improvements and lane additions are assumed under all year 2038 no-build and build analysis scenarios.

In addition to local street intersections, the traffic analysis examined traffic operations at the two off-ramp termini intersections of Stockdale Highway and Interstate 5. The analysis results indicated that by year 2038, a traffic signal would need to be installed at the Interstate 5 southbound off-ramp to Stockdale Highway. This traffic signal installation is needed for all no-build and build project scenarios for year 2038 projected traffic volumes. A signalized intersection is not needed to address opening year 2018 conditions.

The Federal Highway Administration’s August 2010 *Interstate System Access Informational Guide* indicates that improvements to traffic control at ramp termini with local roads should be reviewed to ensure that the changes in traffic control (i.e., signalization) do not result in queue spillback into the mainline lanes of the interstate facility and that sufficient storage is provided.

This review has been undertaken and no spillback to the mainline will occur given the installation of a traffic signal at the southbound off-ramp termini when traffic volumes warrant.

It should be noted that construction of a new freeway segment from Heath Road to Interstate 5 will likely negate the need for a traffic signal installation at the southbound off-ramp to Stockdale Highway. As this traffic signal is not needed for opening year project conditions, and may never be needed under future conditions, this traffic operational analysis recommends that coordination with FHWA's Division Office be deferred until such time that traffic volumes and queue lengths approach or meet traffic signal warrants.

With the installation of traffic signals at the intersections identified above, Stockdale Highway will operate at level of service C or better conditions at all segment 3 study intersections.

In addition to intersection analysis, highway segment analysis was conducted for the two segments lying east and west of State Route 43 which are unsignalized (uninterrupted flow) for a distance of two or more miles:

1. Interstate 5 to State Route 43
2. State Route 43 to Nord Road

The results of the highway segment analysis indicate that Stockdale Highway operates, and will continue to operate, below Caltrans (District 6) level of service threshold of the transition between LOS C and LOS D for rural roads (Stockdale Highway west of Enos Lane) or the transition between LOS D and LOS E for urban roads (Stockdale Highway east of Enos Lane).

State Route 58/State Route 99 Interim Connections

The build alternatives A, B, and C do not provide direct connector ramps to or from the north on State Route 99 as part of the Centennial Corridor project. The preliminary plans allow for these ramps to be constructed a future date. Interim access will be provided by the State Route 99 interchange with existing State Route 58 (west), connecting to the Westside Parkway via Mohawk Street.

As part of the build alternatives, the project will improve the southbound State Route 99 off-ramp to Rosedale Highway. To provide an acceptable level of service, the number of turn lanes will need to be improved from one left-turn plus one shared left- and right-turn lane to two left-turn lanes and two free right-turn lanes. The additional turn lanes will each be 12 feet wide.

In addition to this ramp termini intersection improvement, Rosedale Highway will be widened from two lanes per direction to three lanes per direction to the west of Gibson Street to Mohawk Street and beyond. This widening of Rosedale Highway is a separate project which will be constructed with or without the Centennial Corridor project.

Figure 13 illustrates the interim route connection between the Westside Parkway and State Route 99, to and from the north. The route covers 2.1 miles from the State Route 99/Rosedale Highway undercrossing to the Westside Parkway/Mohawk Street overcrossing.

A southbound State Route 99 to westbound Westside Parkway motorist following the interim connecting route would pass through seven signalized intersections; while an eastbound to northbound motorist would pass through 10 signalized intersections.



Figure 13: Interim Connection between Westside Parkway and State Route 99

The year 2038 level of service computed for these intersections is LOS D or better except at the intersection of Mohawk Street and Rosedale Highway where LOS E and F conditions are forecast for year 2038.

Insofar as the build alternatives, providing direct connector ramps to/from the north on State Route 99 would lengthen the route traveled, but this journey would occur at a higher rate of speed. The relative change in distance and travel time is as follows:

Comparative Distance and Travel Time from Westside Parkway to/from State Route 99 North

	LENGTH (miles)*	DELTA	
		MILES	TIME (min)**
Interim route	2.6	0	0
Alternative A (with future ramps)	4.5	+1.9	-0.7
Alternative B (with future ramps)	4.9	+2.3	-0.3
Alternative C (with future ramps)	2.7	+0.1	-2.5

*State Route 99/Rosedale Highway undercrossing to 0.55 miles west of Westside Parkway/Mohawk Street overcrossing.

**Average change in travel time. During peak hours, could be more; during off-peak hours, could be less.

Based on this assessment of motorist delay and increased vehicle miles traveled, direct connector ramps from Westside Parkway to/from State Route 99 (north) will be deferred until sometime following year 2038, or when demand and traffic operating conditions along the interim route warrant.

Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations 771.111[f]) require that (1) projects have logical limits and be long enough that the environmental analysis has a broad scope; (2) projects are usable and a reasonable use of funds, even if no additional transportation improvements in the area are made (this is known as independent utility); and (3) approval of a project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. As discussed below, the Centennial Corridor project build alternatives A, B, and C comply with these requirements.

Both the ultimate project (construction of all three roadway segments) and phased project (construction by segment) have logical limits. The ultimate project would provide a freeway facility that connects State Route 58 with State Route 99 and Interstate 5 at freeway-to-freeway interchanges. The segment 1 project would close a gap by connecting State Route 58 (east) with the new Westside Parkway (segment 2). The connecting ramps from State Route 58 (west) to and from State Route 99 (south) would be constructed as part of the Centennial Corridor project. Connecting ramps from State Route 58 (west) to and from State Route 99 (north) would be constructed at a later date. Insofar as the connection to Interstate 5, segments 1 and 2 and Stockdale Highway would serve the developed portion of metropolitan Bakersfield by moving traffic, goods, and freight through the area, and would provide access to Interstate 5 for improved regional access. The ultimate segment 3 freeway facility would connect Interstate 5 with the west

end of the Westside Parkway at the point in time when the travel demand exceeds the capacity of Stockdale Highway (a two-lane roadway). Identifying segment 3 as a future alignment for State Route 58 will allow preservation of an adequate transportation corridor in the future. Combined with the existing State Route 58 (east), the project would provide a high capacity, high level of service, east–west facility in the San Joaquin Valley.

Another important consideration is whether the project is of sufficient length to address traffic and environmental related matters on a broad scope. At 17.4 to 18.5 miles long (depending on the alternative), the study corridor extends well beyond the proposed construction limits. This ensures that the traffic issues that would be addressed in detail if construction of segment 3 and the State Route 58 (west)/State Route 99 (north) direct connector ramps, as proposed in the future, are considered at a Tier I planning level now.

The project's phased implementation would provide an effective and efficient roadway even if no additional transportation improvements are made as the connection of segment 1 and segment 2 would provide an adequate traffic level of service through 2038 (the project's design year). Finally, there are no other projects that would be needed or are dependent on construction of the Centennial Corridor project.

CHAPTER 1. INTRODUCTION

1.1 Project Overview

The California Department of Transportation (Caltrans) proposes to establish a new alignment for State Route 58, which would provide a continuous route along State Route 58 from Cottonwood Road on existing State Route 58, east of State Route 99 (post miles T31.7 to R55.6), to Interstate 5 (I-5) via the Westside Parkway. Improvements to State Route 99 (post miles 21.2 to 26.2) and Westside Parkway would also be made to accommodate the connection with State Route 58.

The project is located at the southern end of the San Joaquin Valley in the city of Bakersfield in Kern County, California (see Figure 1-1). The study site is bound on the east by Cottonwood Road, on the west by I-5, on the north by Gilmore Avenue, and on the south by Wilson Road. Caltrans is the lead agency for the project pursuant to the California Environmental Quality Act and the National Environmental Policy Act.

The proposed continuous route, known as the Centennial Corridor, has been divided into three segments, as shown in Figure 1-2.

Segment 1 is the easternmost segment, which would connect the existing State Route 58 (East) freeway to the Westside Parkway. Multiple alignment alternatives are being evaluated for this segment and are discussed below.

Segment 2 is composed of the Westside Parkway, which extends westerly from Truxtun Avenue to Heath Road. This roadway is a local facility that is currently under construction and would be transferred into the State Highway System. The analysis evaluates potential impacts associated with incorporating the Westside Parkway as part of the State Highway System, as well as improvements to facilitate traffic operations between the Westside Parkway and the Centennial Corridor. The analysis provides updates to the relevant results of the *Westside Parkway Environmental Assessment/Final Environmental Impact Report*, as necessary.

Segment 3 would extend from Heath Road to I-5. This segment will need a temporary route adoption for the use of Stockdale Highway between Heath Road and I-5 as an interim alignment for State Route 58 and for a future new alignment (ultimate) as identified in the 2002 *Route 58 Route Adoption Project Tier I Environmental Impact Statement/Environmental Impact Report* (EIS/EIR) will be constructed when there is greater traffic demand and funding is available. Therefore, traffic analysis of Segment 3 has been evaluated for the interim use of Stockdale Highway between Heath Road and I-5. Improvements to the Stockdale Highway/State Route 43 (known locally as Enos Lane) intersection would be made to accommodate the additional traffic.

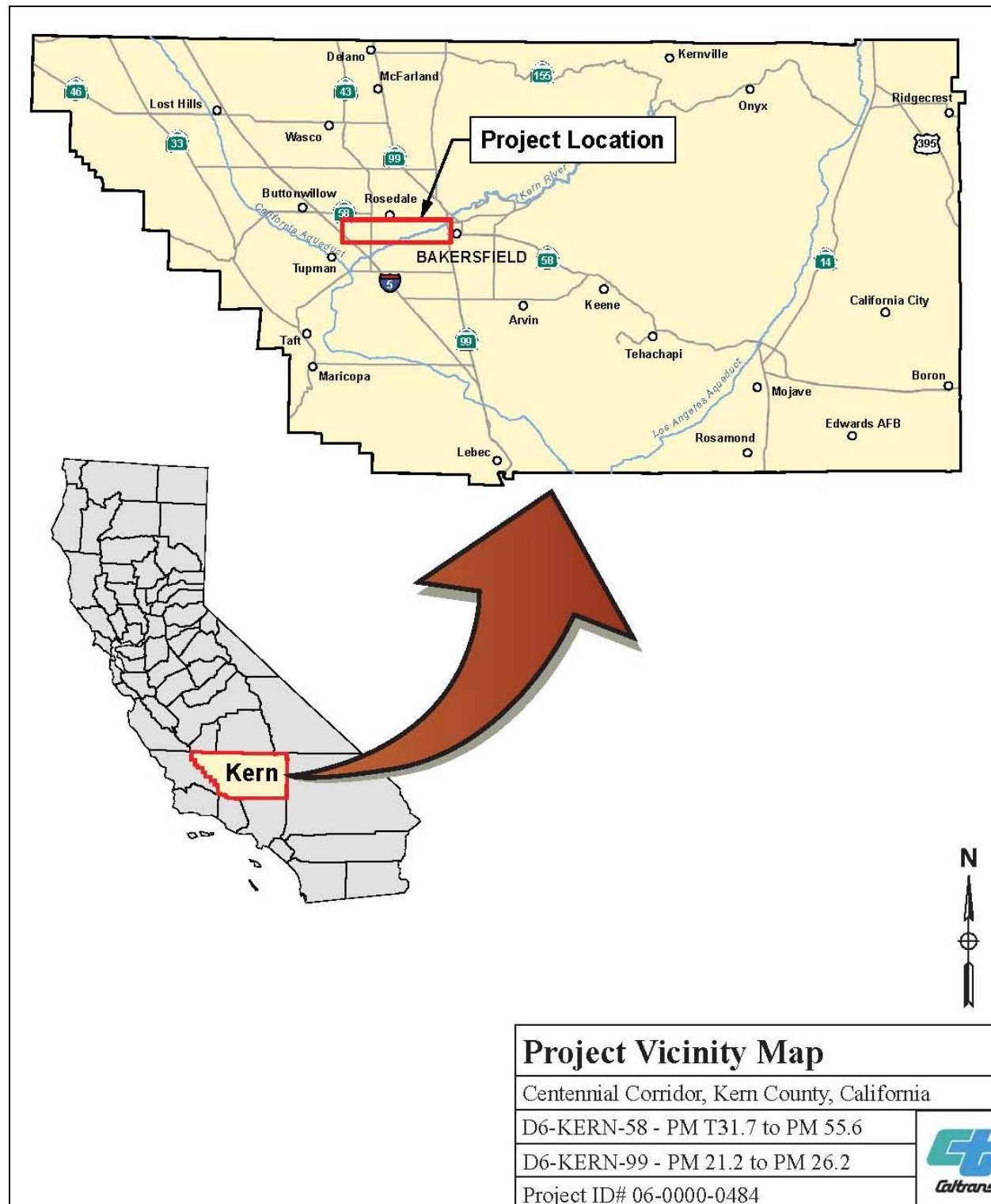


Figure 1-1: Project Vicinity

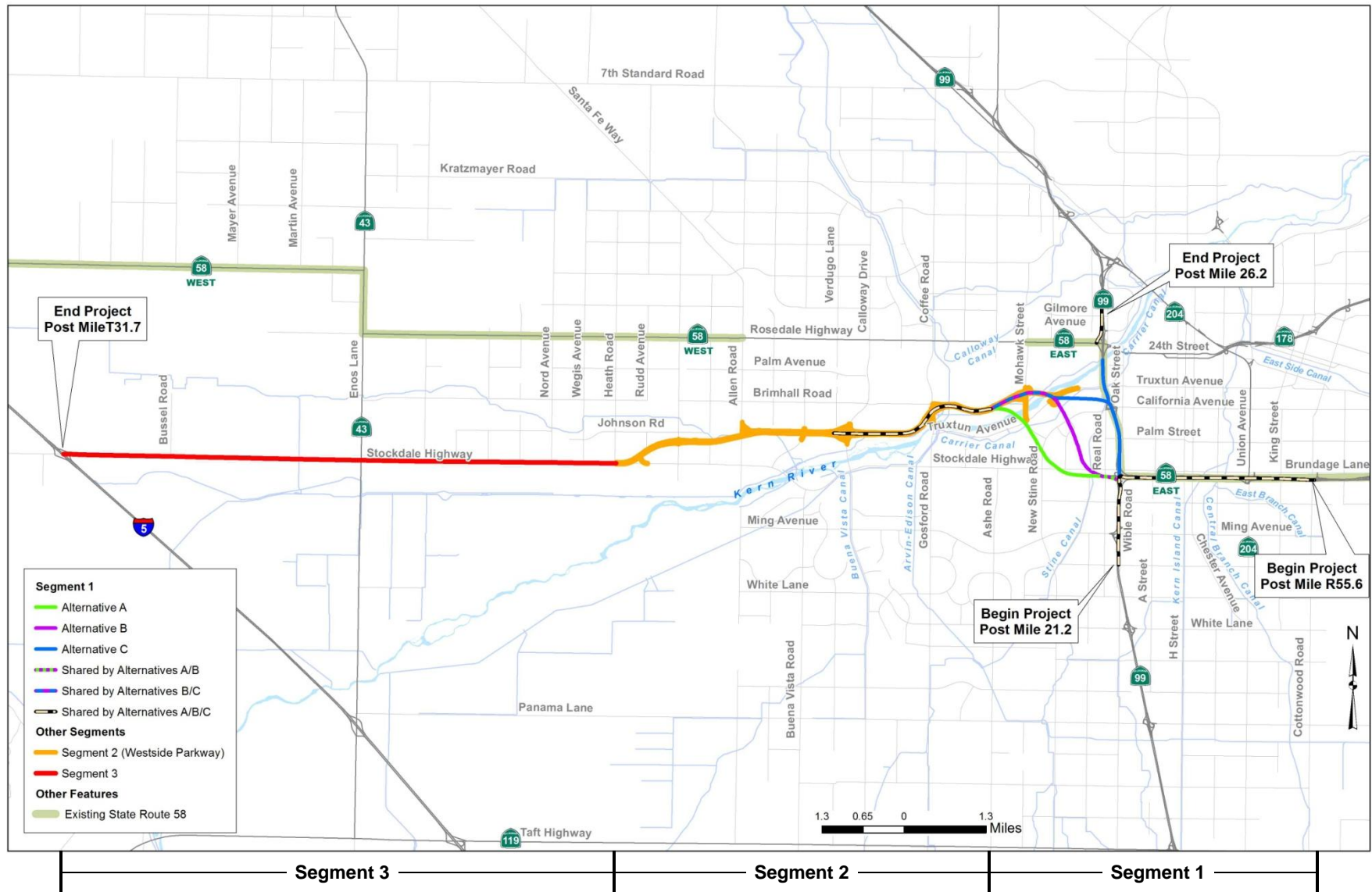


Figure 1-2: Project Location Map

1.2 Purpose and Need

The purpose of the Centennial Corridor project is to provide route continuity and associated traffic congestion relief along State Route 58 within Metropolitan Bakersfield and Kern County from State Route 58 east (at Cottonwood Road) to I-5.

State Route 58 is a critical link in the state transportation network that is used by interstate travelers, commuters, and a large number of trucks. Under existing conditions, State Route 58 does not meet the capacity needs of the area, and this is expected to get worse as the population grows. State Route 58 lacks continuity in central Bakersfield, which results in severe traffic congestion and reduced levels of service on adjoining highways and local streets. This route is offset by about one mile at State Route 43 and by about two miles at State Route 99. The merging of two major state routes (58 and 99) into one alignment between the eastern and western legs of State Route 58 degrades the traffic level of service on this segment of freeway. In addition, State Route 99's close spacing for its two interchanges with State Route 58 (east and west), in addition to an interchange at California Avenue, results in vehicles aggressively changing lanes, which adds to congestion.

1.3 Project Description

The project alternatives include three build alternatives and a no-build alternative. In addition to these, this traffic study report evaluates a transportation systems management alternative referenced as alternative M.

No Build Alternative

No construction of Segment 1 would occur under the no-build alternative. In addition, no improvements to the Westside Parkway from Truxtun Avenue to the Calloway Drive interchange would be required. There would also be no improvements made to the Stockdale Highway/State Route 43 intersection. The No-Build Alternative would involve the following actions: (1) the Westside Parkway would be route adopted into the State Highway System; (2) the portion of Mohawk Street from Westside Parkway to Rosedale Highway would be designated as part of State Route 58, which would provide a connection to State Route 99; (3) Stockdale Highway between Heath Road and Interstate 5 would serve as an interim alignment for State Route 58 until ultimate improvements are constructed; and (4) the portion of State Route 58 (West) from Allen Road to Interstate 5 would be relinquished to the local jurisdictions as a local facility.

Build Alternatives

As shown in Figure 1-3, the three build alternatives (Alternatives A, B, and C) within Segment 1 propose new alignments that would extend from Cottonwood Road on the existing State Route 58 (East) and connect I-5 via the Westside Parkway. Alternatives A and B would be west of State Route 99, and Alternative C would parallel State Route 99 to the west. Under Alternative A, the eastern end of the Westside Parkway mainline would be realigned to conform to the Alternative A alignment, and ramp connections would be provided to the Mohawk Street interchange. Under Alternatives B and C, the alignments would connect to the Westside Parkway by extending the mainline lanes built as part of the Westside Parkway project. Detailed descriptions of the alternatives are provided on the following subsections.

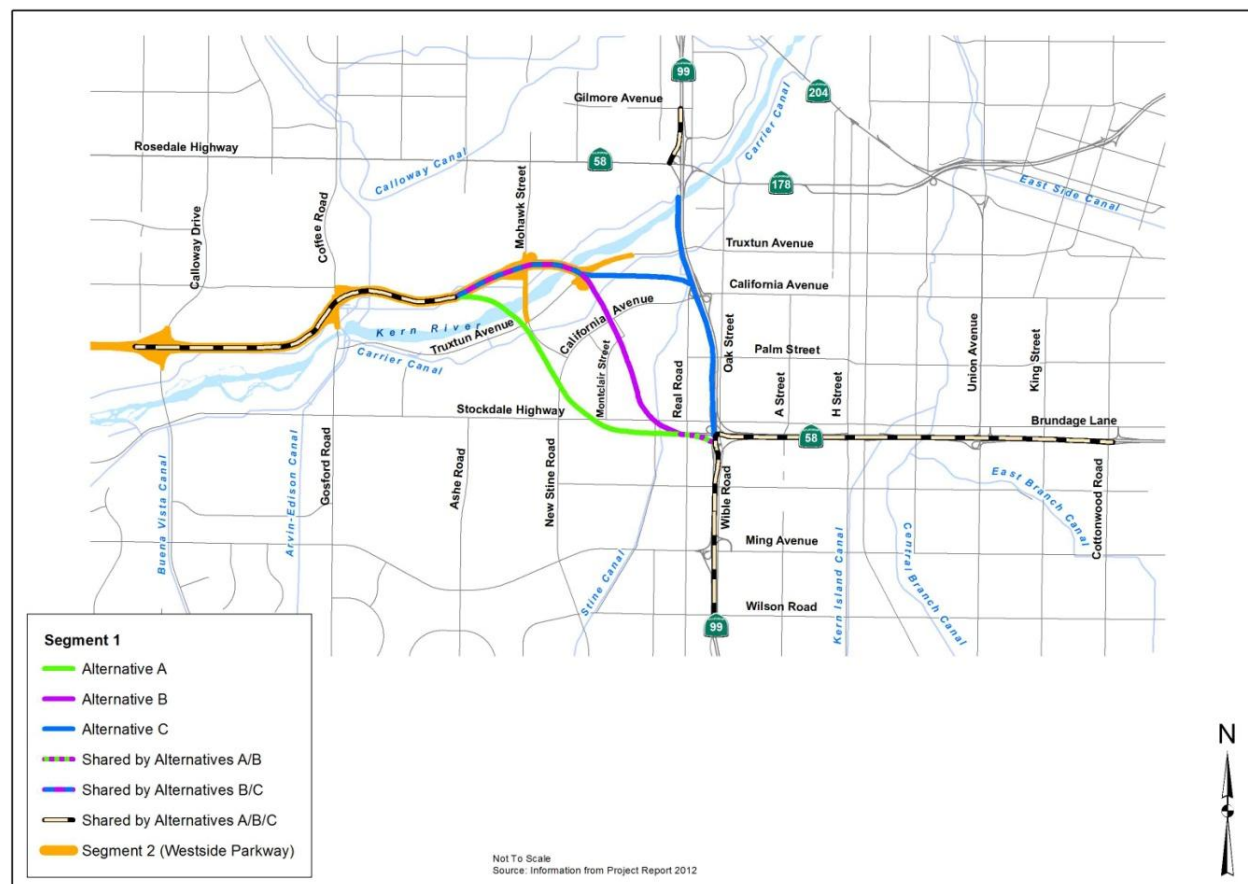


Figure 1-3: Alternatives for Segment 1 of the Centennial Corridor

Common Design Features of the Build Alternatives

The build alternatives would connect State Route 58 (East) to the east end of the Westside Parkway by means of a six-lane freeway. All the build alternatives would involve a route adoption to include the selected Segment 1 alignment and the Westside Parkway into the State Highway System as State Route 58. In Segment 3, there would be a temporary route adoption of Stockdale Highway as the interim State Route 58 connection to Interstate 5 until the ultimate alignment (the Cross Valley Canal alignment addressed in the 2001 EIS/EIR) is constructed, which would occur at a later date. Though the alignment and design characteristics vary by alternative, the three build alternatives have the following common design features.

Segment 1

All the alternatives would provide the following connections between State Route 58 and State Route 99 using high speed connection ramps:

- Northbound State Route 99 to westbound Centennial Corridor.
- Northbound State Route 99 to eastbound State Route 58 (East).
- Southbound State Route 99 to eastbound State Route 58 (East).
- Eastbound Centennial Corridor to southbound State Route 99.
- Westbound State Route 58 (East) to southbound and northbound State Route 99.

Direct connector ramps from southbound State Route 99 to westbound State Route 58 are not being provided as part of this project. However, to accommodate this movement, the southbound State Route 99/Rosedale Highway off-ramp would have two lanes off the freeway and be widened to four lanes at the intersection with Rosedale Highway. Additionally, an auxiliary lane would be provided on State Route 99 from south of Gilmore Avenue to the State Route 58 (Rosedale Highway) off-ramp. Direct connector ramps from eastbound State Route 58 to northbound State Route 99 are not being provided as part of this project.

The project would require the widening of the South P Street Undercrossing and the westbound State Route 58 Grade Separation over State Route 99. In addition, the Stockdale Highway off-ramp from southbound State Route 99 and the Wible Road on- and off-ramps on State Route 99, located just south of the existing State Route 58/State Route 99 interchange, would be removed.

Segment 2

The Westside Parkway would be incorporated into the State Highway System with each of the Build Alternatives. Improvements to connect Centennial Corridor to the Westside Parkway would extend from where each build alternative connects at the eastern end of the Westside Parkway toward the west, ending at the Calloway Drive interchange. The proposed improvements would widen the Westside Parkway by constructing one additional lane in the median to provide auxiliary lanes. In the westbound direction, the median widening would extend from east of the Friant-Kern Canal through the Calloway Drive interchange. The limits of the added lane in the eastbound direction would differ between each alternative, as described in the Unique Design Features of the Build Alternatives section below. With each build alternative, modifications to the westbound diamond off-ramp to Calloway Drive and the eastbound loop on-ramp from Coffee Drive would be required.

Though the improvements described above are physically located in Segment 2, construction would be undertaken as part of Segment 1 construction to facilitate traffic operations between the Westside Parkway and the Centennial Corridor.

Segment 3

With each build alternative, the Stockdale Highway/State Route 43 intersection would be widened and traffic signals would be added to control the traffic movements. State Route 43 would be widened to add a dedicated left-turn lane in both directions. Stockdale Highway would be widened to add a dedicated left-turn lane and a shared through/right-turn lane in both directions. Though physically located in Segment 3, these improvements would be built as part of Segment 1 to ensure adequate traffic operations at this intersection.

Unique Design Features of the Build Alternatives

ALTERNATIVE A

Alternative A would travel westerly from the existing State Route 58/State Route 99 interchange for about 1 mile, south of Stockdale Highway, where it would turn northwesterly and go over Stockdale Highway/Montclair Street, California Avenue/Lennox Avenue, Truxtun Avenue, and the Kern River before joining the eastern end of the Westside Parkway near the Mohawk Street interchange.

A link would be provided from northbound State Route 99 to westbound State Route 58 and from eastbound State Route 58 to southbound State Route 99 via high-speed connectors. No direct connector ramps would be built from southbound State Route 99 to westbound State Route 58 or from eastbound State Route 58 to northbound State Route 99. Southbound State Route 99 would be widened to accommodate the additional traffic from eastbound State Route 58 to the southbound State Route 99 connector. The existing westbound State Route 58 to southbound State Route 99 loop-ramp connector would be realigned and would connect to the proposed eastbound State Route 58 to southbound State Route 99 connector before merging onto southbound State Route 99. The existing southbound State Route 99 to eastbound State Route 58 connector and northbound State Route 99 to eastbound State Route 58 would be preserved with some changes.

The limits of widening on State Route 99 would extend to the Wilson Road overcrossing. On northbound State Route 99, a three-lane exit would be provided just north of Wilson Road to carry the northbound State Route 99 to westbound State Route 58 traffic on two lanes and the Ming Avenue on- and off-ramp traffic on the third lane. All ramps in this area would have to be realigned to provide for the additional lanes. The Wible Road on- and off-ramps just south of the existing State Route 58/State Route 99 interchange, which is in conflict with the Caltrans standards of interchange spacing, would have to be removed to accommodate this design. The Stockdale Highway off-ramp on the southbound State Route 99 to eastbound State Route 58 connector would be removed as well. Under this concept, State Route 58 would also lose its link with Real Road. Also, Alternative A would provide an auxiliary lane on southbound State Route 99 from south of Gilmore Avenue to the Rosedale Highway off-ramp.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp.

Other features with this alternative include (1) the construction of 19 soundwalls; (2) the construction of a park and ride facility off Mohawk Street between California Avenue and Truxtun Avenue, to replace the facility that would be displaced by the project; (3) 7 infiltration basins, which would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and (4) 48 retaining walls of varying sizes located throughout the study area.

ALTERNATIVE B

Alternative B would run westerly from the existing State Route 58/State Route 99 interchange for about 1,000 feet, south of Stockdale Highway, where it would turn northwesterly and span Stockdale Highway/Stine Road, California Avenue, Commerce Drive, Truxtun Avenue, and the Kern River before joining the east end of Westside Parkway between the Mohawk Street and Coffee Road interchanges. This alignment would depress State Route 58 between California Avenue and Ford Avenue. Overcrossings are proposed at Marella Way and La Mirada Drive to ease traffic circulation.

Alternative B proposes the same connections to State Route 99 that Alternative A does and would require similar improvements on State Route 99 and existing State Route 58.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk

Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative include (1) the construction of 24 soundwalls; (2) the construction of a park and ride facility north of California Avenue, next to the Centennial Corridor, to replace the facility that would be displaced by the project; (3) 8 infiltration basins that would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and (4) 42 retaining walls of varying sizes located throughout the study area.

ALTERNATIVE C

Near the existing State Route 58/State Route 99 interchange, Alternative C would turn north and run parallel to the west of State Route 99 for about one mile. The freeway would turn west and span the BNSF Railway rail yard, Truxtun Avenue, and the Kern River. This alternative proposes undercrossings at Brundage Lane, Oak Street, State Route 99, Palm Avenue, and California Avenue.

Connections would be provided from eastbound State Route 58 to southbound State Route 99 and from northbound State Route 99 to westbound State Route 58. The existing westbound State Route 58 to southbound State Route 99 loop-ramp connector would connect to the proposed eastbound State Route 58 to southbound State Route 99 connector before merging onto southbound State Route 99. The southbound State Route 99 Ming Avenue off-ramp would be relocated north of the eastbound State Route 58 to southbound State Route 99 connector to facilitate weaving between the Ming Avenue off-ramp and the eastbound State Route 58 to southbound State Route 99 connector traffic. A connector would be provided east of northbound State Route 99 from Brundage Lane to south of California Avenue to facilitate weaving between westbound State Route 58 to northbound State Route 99 traffic with northbound State Route 99 to westbound State Route 58 traffic.

Improvements on State Route 99 would extend from the Wilson Road overcrossing (south of the State Route 58/State Route 99 interchange) to the Gilmore Avenue overcrossing (north of the State Route 58/State Route 99 interchange). A collector-distributor (C-D) road system would provide access from westbound State Route 58 to northbound State Route 99, as well as from northbound State Route 99 to westbound State Route 58. The Wible Road on- and off-ramps just south of the existing State Route 58/State Route 99 interchange would have to be removed to accommodate the northbound State Route 99 auxiliary lane. The Stockdale Highway off-ramp on the southbound State Route 99 to eastbound State Route 58 connector would be removed as well. Under this concept, southbound State Route 99 would also lose its link with Real Road.

The median widening to provide an auxiliary lane along Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp, and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and

realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative include (1) the construction of 17 soundwalls; (2) the construction of a park and ride facility at Real Road and Chester Lane to replace the facility that would be displaced by the project; (3) 11 infiltration basins that would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and (4) 42 retaining walls of varying sizes located throughout the study area.

ALTERNATIVE M

Alternative M, the transportation system management alternative, proposes local arterial improvements to increase the person-carrying capacity. Low-cost improvements include traffic signal optimization, intersection widening and bus service and stop improvements along all of the east–west arterial streets from Hageman Road to Ming Avenue. The same improvements are also assumed for the no-build and all build alternatives, and were therefore not specifically evaluated by this traffic study. Higher cost improvements include constructing grade separations along Rosedale Highway at four major north–south arterial streets and reducing the number of intervening signalized intersections between Allen Road and State Route 99. Detailed traffic operational analysis of the alternative indicates that Rosedale Highway would also need to be widened to eight lanes between Fruitvale Avenue and State Route 99, a distance of 1.8 miles, to accommodate forecast traffic volumes. This alternative assumes there is no new direct connection between the approved Westside Parkway and existing State Route 58/State Route 99 interchange.

1.4 Background

The need for a high-capacity transportation corridor in western Kern County has been recognized by local and regional planners for decades. The 2001 *Route 58 Route Adoption Project Tier 1 Environmental Impact Statement/Environmental Impact Report* focused on the location of a multi-modal transportation corridor to replace existing State Route 58 in the future. The purpose of the Tier 1 study was to provide continuity for State Route 58 in Kern County, and to provide an alignment for a future multi-modal transportation facility that would reduce congestion on the local transportation network in the western metropolitan Bakersfield area. The Tier 1 study documented previous transportation planning studies, and analyzed many different alternatives from State Route 58 (east) to Interstate 5. A major result of the Tier 1 effort was the selection and adoption of the Cross Valley Canal alignment as the preferred alternative which led to the preservation and future acquisition of sufficient right-of-way to meet long-term future transportation needs, such as mixed-use travel lanes, truck route, high occupancy vehicle (HOV) lanes, rapid transit and light rail.

The 2007 *Tier 2 Westside Parkway Environmental Assessment/Final Environmental Impact Report* was prepared to evaluate the construction-level impacts of the first transportation project identified along the Tier 1 Cross Valley Canal alignment preferred alternative. Except for adjustments at the east end, the alignment of Westside Parkway is nearly identical to the eastern segment of the Cross Valley Canal alignment. Westside Parkway extends west from Truxtun Avenue near Mohawk Street to Stockdale Highway at Heath Road. Westside Parkway builds upon the previously

identified Tier 1 alignment by providing a major link toward improving route continuity for State Route 58.

The construction of Centennial Corridor would provide the next logical step that is needed to implement the on-going plan for improving route continuity and connectivity for State Route 58. The connection from State Route 58 (east) to Westside Parkway using the Centennial Corridor Segment 1 proposed build alternatives A, B or C would move east–west regional and inter-regional motor vehicle and truck traffic through Bakersfield to Interstate 5 more efficiently than currently experienced.

All of the above background leads to this traffic study report to evaluate the performance of the build alternatives and the transportation system management/transit alternative from a traffic accommodation perspective.

CHAPTER 2. EXISTING CONDITIONS

2.1 Land Use and Demographic Conditions

The city of Bakersfield, located at the southern “horseshoe” end of San Joaquin Valley in Kern County, has the ninth highest population in the state of California. The city has an arid climate with hot, dry summers and brief, moderate winters. The southern tip of the Sierra Nevada is just to the east and the city limits extend to the Sequoia National Forest at the base of the Greenhorn Mountain Range and at the entrance to Kern Canyon. The Tehachapi Mountains are south of Bakersfield and the Temblor Range is to the west. The city is located midway between Fresno in the north and Los Angeles in the south, with a total area of approximately 143.6 square miles¹. Being one of the fastest growing cities in the country, Bakersfield ranks third in agriculture-related production and generates more than 75 percent of the state’s oil supply². The city’s economy also relies on petroleum extraction and refining, and manufacturing.

Over the past 20 years, Bakersfield has undergone significant growth in both population and housing units. Figure 2-1 illustrates the growth in the area between years 1990 and 2010. According to the United States Federal Census, the population of Bakersfield was estimated to be nearly 347,483 and the population of the entire metropolitan Bakersfield area well over 500,000. It is also estimated that there are more than 120,725 housing units throughout the city, of which 92.1 percent were occupied. The population density is 2,419 persons per square mile³. Figure 2-2 represents 2010 housing units by census block in the study area.

A majority of Bakersfield residents, 34.8 percent, were under 18 years of age, 7.4 percent were 18 to 24 years old, 28.0 percent were 25 to 44 years old, 21.3 percent were 45 to 64 years old, and 8.5 percent were 65 years of age and over. The median age was estimated to be 30.0 years. Year 2010 U.S. Census shows that 45.5 percent of the Bakersfield population is designated as Hispanic. Overall, 56.8 percent declared a status of white, 8.2 percent black, and 6.2 percent Asian. The 2010 median annual household income in Bakersfield was estimated to be \$53,083. This can be compared to the Kern County median household income of \$47,368, the California median income of \$58,938 and the U.S. median income of \$50,221. In August 2011, the Bureau of Labor Statistics reported that Bakersfield–Delano had an unemployment rate of 14.4 percent, which was higher than the state of California’s unemployment rate of 12.1 percent, and the national rate of 9.1 percent⁴.

Figure 2-3 presents the population density by census block and race within the portion of metropolitan Bakersfield addressed by this traffic study. Areas of high population density are generally located south of the Kern River on either side of State Route 99, State Route 58, State Route 178, and along major arterials such as Stockdale Highway, Ming Avenue, Chester Avenue and Union Avenue. On the north side of the Kern River, the population density is significantly lower. Areas with high population north of the river are scattered along Hageman Road and Rosedale Highway generally between Allen Road and Fruitvale Avenue. A small number of residents reside in the areas farther west, near Interstate 5.

¹ State of California Department of Finance, Demographic Research Unit.

² Ranking and oil supply statistics are based on the City of Bakersfield’s official website.

³ http://www.bakersfieldcity.us/edcd/about_new.htm

⁴ <http://www.bakersfieldcity.us/edcd/demographics.html>

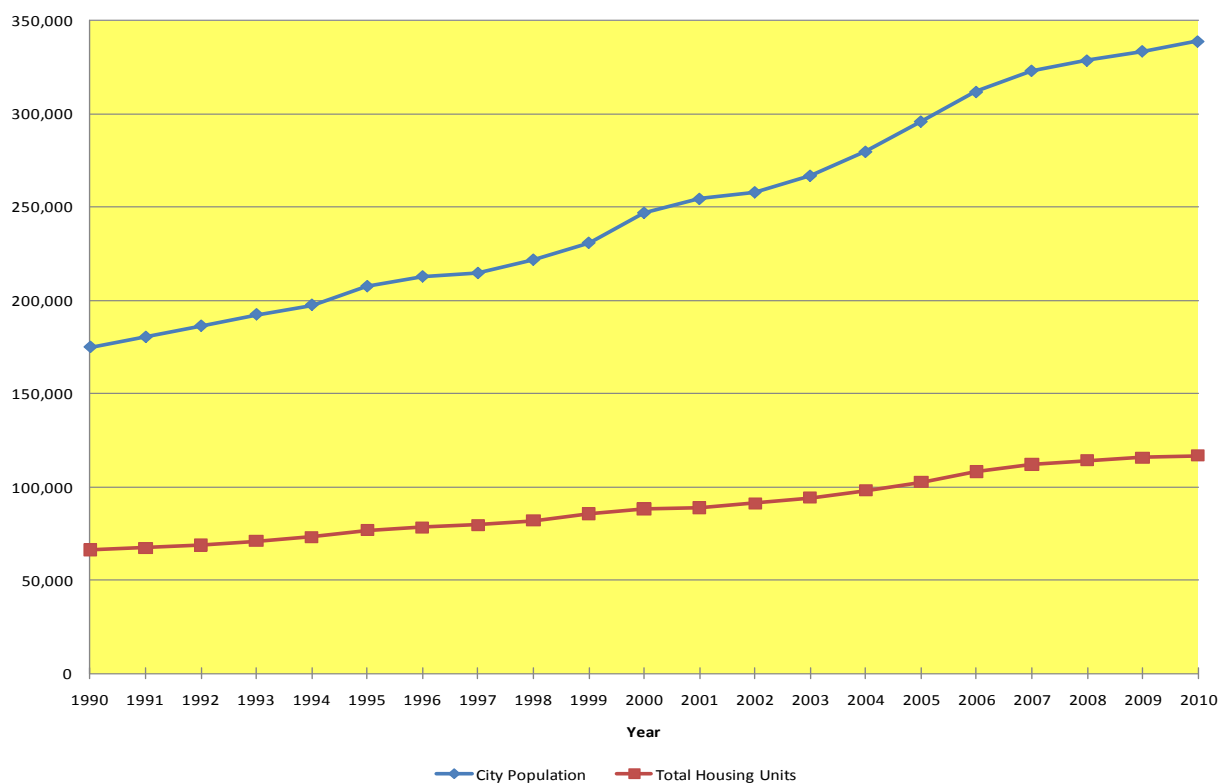


Figure 2-1: City of Bakersfield Population and Housing between 1990 and 2010

Employment

The 2010 Census data indicates that in Bakersfield, approximately 102,000 residents were employed civilians who are 16 years of age and over. As shown in Table 2-1, the majority of the employed labor force is in the educational, health, and social services industry (23.4 percent). The second largest industry is retail trade, representing approximately 12.3 percent of total employed civilians. Other industry groups in the area include professional scientific, management, administrative, and waste management services (9.2 percent); agriculture, forestry, fishing, hunting and mining (9.5 percent); art, entertainment, recreation, accommodation, and food services (8.5 percent); public administration (6.2 percent); construction (5.0 percent); finance, insurance, real estate, rental and leasing (5.4 percent); manufacturing (5.1 percent); transportation, warehousing and utilities (5.1 percent); wholesale trade (3.8 percent); other services (5.0 percent); and information (1.5 percent). The estimated 2006 employment distribution within the study area is illustrated in Figure 2-4, based on data provided by the California Employment Development Department. It is assumed that the overall 2010 employment distribution has changed relatively little within the past five years. As is shown in the figure, on the south side of the Kern River, areas along Chester Avenue north of California Avenue (downtown area), Stockdale Highway west of State Route 99, Truxtun Avenue and State Route 99 have high concentrations of employment. On the north side of the river, areas with high employment are located on either side of State Route 99 as well as along Rosedale Highway between Calloway Drive and Fruitvale Avenue.

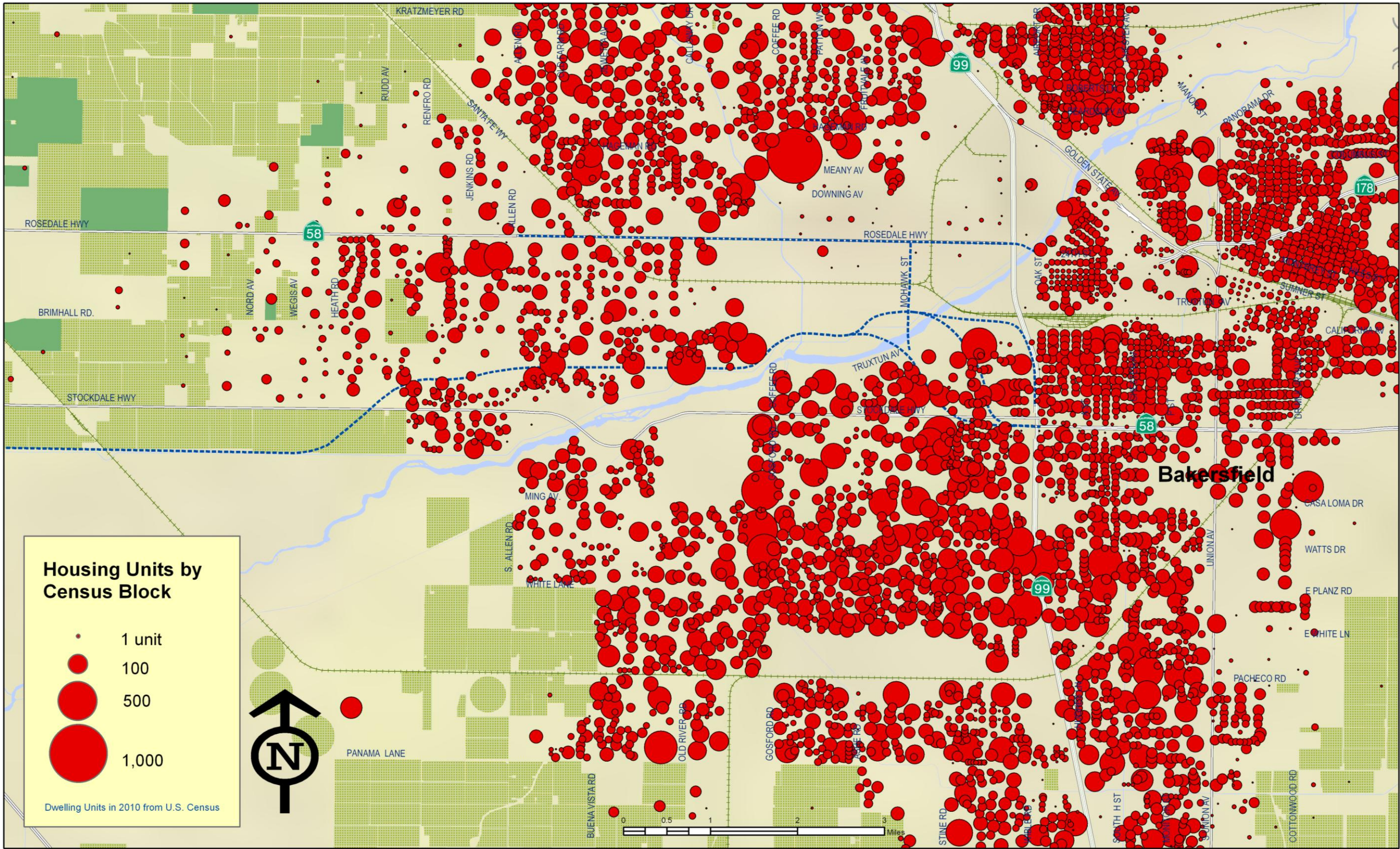


Figure 2-2: Bakersfield 2010 Housing Units by Census Block

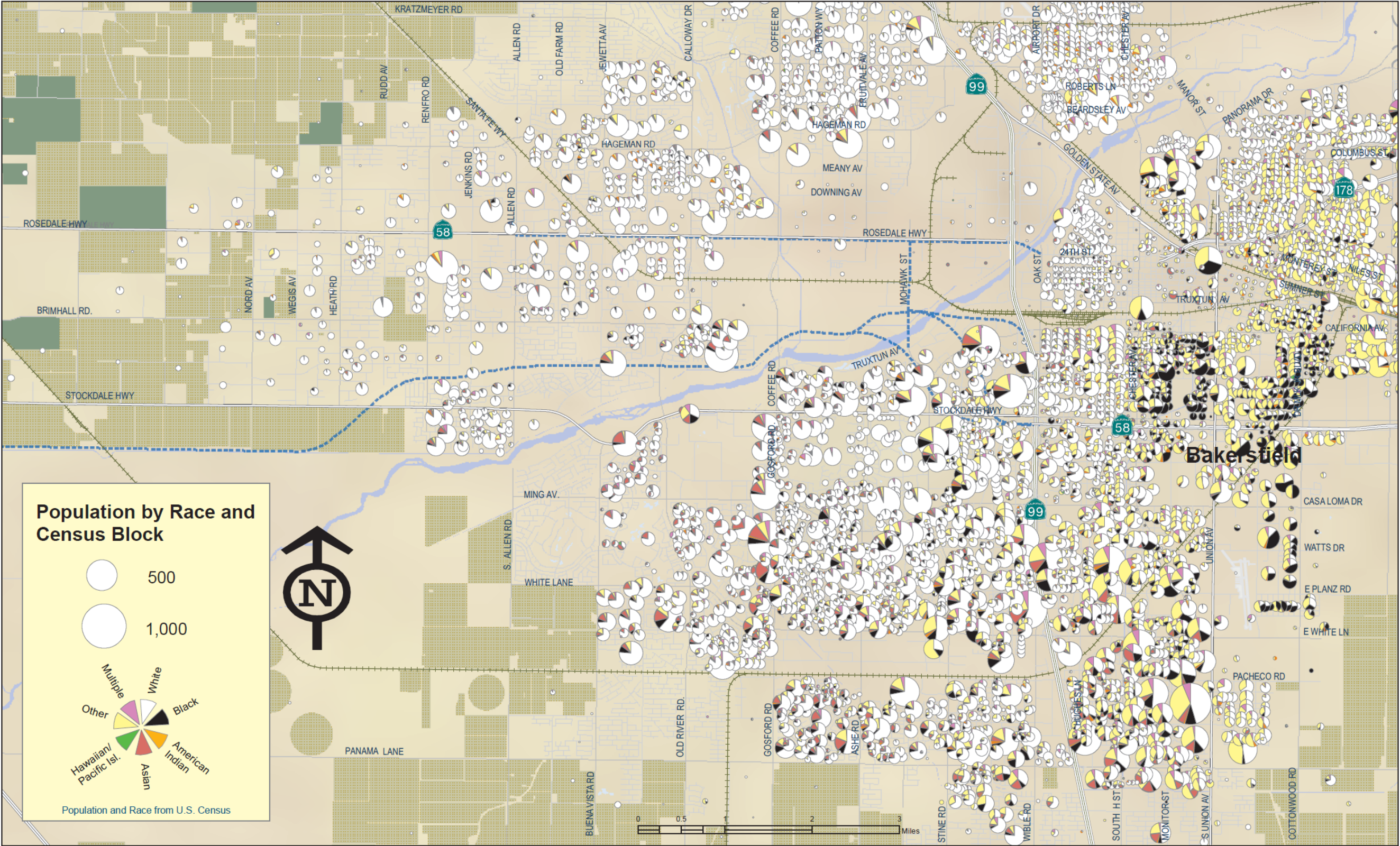


Figure 2-3: Centennial Corridor Study Area
2010 Population Density by Census Block
and Race (2010 Census Data)

Table 2-1. Census 2010 Employed Civilian Population (16 years of age and over)

INDUSTRY	EMPLOYED CIVILIANS	PERCENTAGE
Educational, health, and social services	32,722	23.4%
Retail trade	17,226	12.3%
Professional, scientific, management, administrative, and waste management services	12,794	9.2%
Agriculture, forestry, fishing and hunting, and mining	13,204	9.5%
Arts, entertainment, recreation, accommodation, and food services	11,853	8.5%
Public Administration	8,711	6.2%
Construction	7,003	5.0%
Finance, insurance, real estate, and rental leasing	7,525	5.4%
Manufacturing	7,071	5.1%
Transportation and warehousing, and utilities	7,129	5.1%
Wholesale trade	5,370	3.8%
Other services	7,005	5.0%
Information	2,097	1.5%
Total	139,710	100.0%

Land Use

The proposed Centennial Corridor, which extends from east of State Route 99 to Interstate 5, covers an approximate distance of 20 miles and consists of three segments: the Eastern segment from the existing State Route 58 near Cottonwood Road to Mohawk Street; Westside Parkway from Mohawk Street to Heath Road; and the Western segment from Heath Road to Interstate 5.

Based on the 2002 Metropolitan Bakersfield General Plan, existing land use surrounding the three segments of the corridor was generalized by eight land use categories. These eight land use categories include residential, commercial, industrial, recreation, agriculture, resource/utility, undeveloped/vacant, and government uses. Future land use for this area was also determined to follow the existing development patterns according to the 2002 Metropolitan Bakersfield General Plan and the 2007 Kern County General Plan. Figure 2-5 provides the type and distribution of land uses within Bakersfield and unincorporated Kern County in the vicinity of the Centennial Corridor.

The eastern segment of the corridor is located between downtown Bakersfield and the Kern River, and is generally bounded by Rosedale Highway to the north, Ming Avenue to the south, Cottonwood Avenue to the east, and Mohawk Street to the west. In general, the lands to the west and east of the Kern River within this segment area are designated primarily for industrial and residential uses, respectively. Commercial lands are situated along Truxtun Avenue, Stockdale Highway, California Avenue, State Route 99 and Union Avenue. In addition, industrial land use is also located along the Burlington Northern Santa Fe (BNSF) Railway yard east of the Kern River.

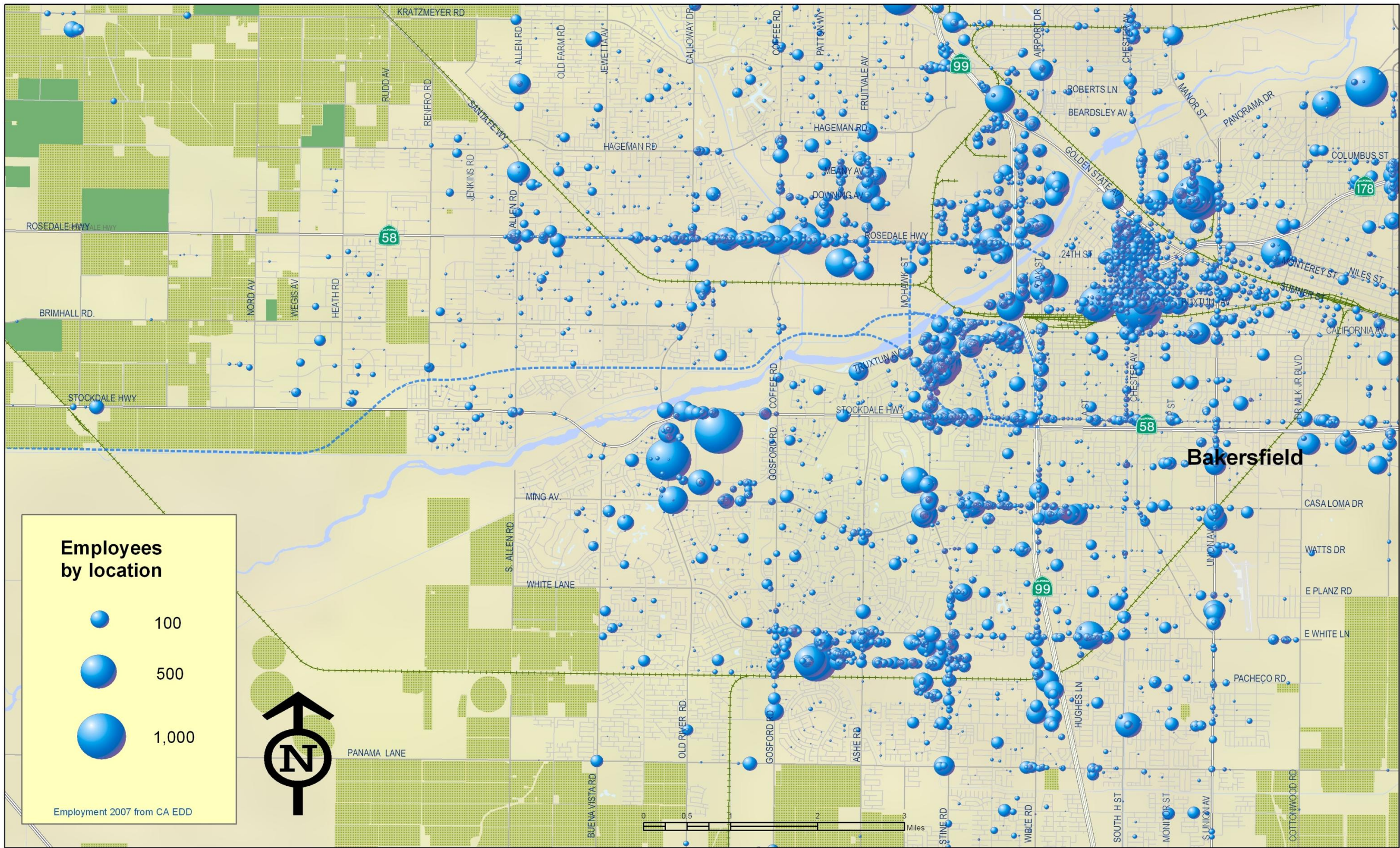


Figure 2-4: Distribution of Centennial Corridor 2006 Employment (2006 California Employment Development Department Data)

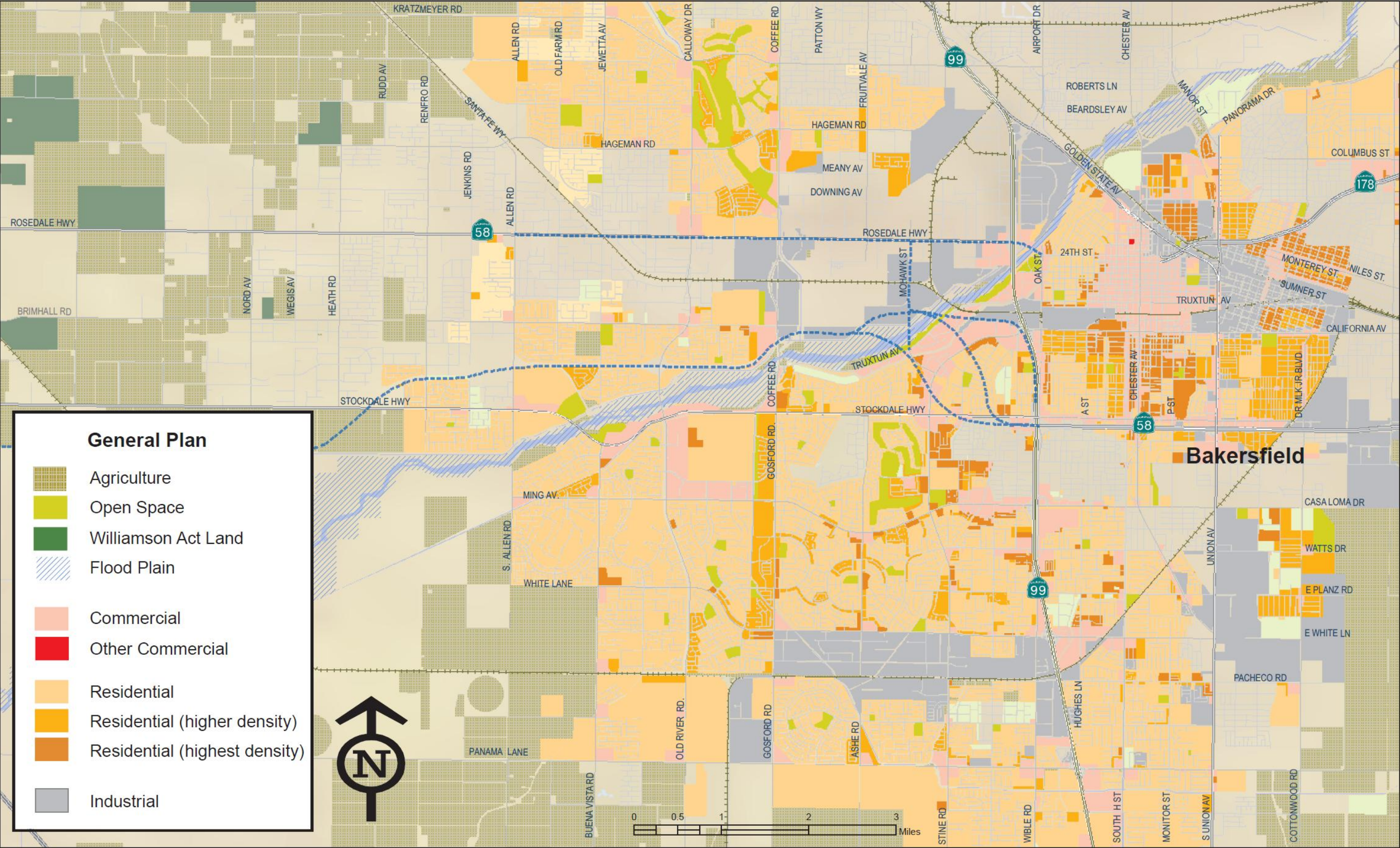


Figure 2-5: Study Area Land Use Type and Distribution along Centennial Corridor

The Bakersfield Municipal Airport, which is situated east of Union Avenue and south of Casa Loma Drive, is surrounded solely by industrial lands. On the east and west sides of the airport, the lands are largely designated as agricultural and residential uses, respectively. The airport does not serve the general public through commercial airlines, but provides only charter and executive services.

The Westside Parkway segment of the Centennial Corridor is bounded by Rosedale Highway to the north, Ming Avenue to the south, Mohawk Street to the east and Heath Road to the west. Within this segment area, the predominant land use is residential. Industrial land use is located near the BNSF rail tracks near Rosedale Highway north of the Kern River. Toward the west end of this area, agriculture land use is predominant on both the north and south sides of the river.

The western segment of the study corridor is generally bounded by Rosedale Highway to the north, the Kern River to the south, Heath Road to the east and Interstate 5 to the west. This area is primarily comprised of agriculture lands with some residential land use located between Heath Road and Nord Avenue south of Rosedale Highway.

Schools

Figure 2-6 shows library and school locations within the study area. A total of 82 schools are located within the study area of the corridor. Forty-nine of these schools are elementary schools, twelve are junior high schools, eight are high schools, three are special education schools, one is a university (California State University Bakersfield), and nine are alternative education, community and continuation schools.

Table 2-2 presents the 2010 Census total school enrollment in the Bakersfield by school type.

The total school enrollment (3 years and over) was 114,196. Of this total enrollment, students between 5 and 14 years of age made up more than one-half of the total students in the area. The next largest group is within the 15 to 17 age group, which made up approximately 16 percent of the total school enrollment. Insofar as school type is concerned, students attending grades 1 through 12 made up close to 70 percent of the total (94.6 percent of whom were enrolled in public schools) while college students made up nearly 24 percent of the total.

Eight libraries serve the areas surrounding the study corridor. Two of the eight libraries, the California State University Bakersfield library and the Southwest Bakersfield library, are located south of Stockdale Highway and west of State Route 99. There are six libraries situated to the east of State Route 99—they are Beale Memorial Library, Baker Street Branch Library, Kern County Law Library, Grace Van Dyke Bird Library, Holloway–Gonzales Library, and Eleanor N. Wilson Branch Library. Of these six, Eleanor N. Wilson Branch Library is located south of State Route 58, whereas the others are located north of State Route 58.

Public Services

The Bakersfield Fire Department and Bakersfield Police Department provide public safety services for the city. As shown in Figure 2-7, 12 city fire stations and six county fire stations are located within the study area. Of these fire stations, Stations #67, #11, #3 and #1 are in close proximity of the Centennial Corridor. Four police stations are located within the study area limits, two of which are located near the study corridor—the Rosedale Substation and Central Receiving Facility.

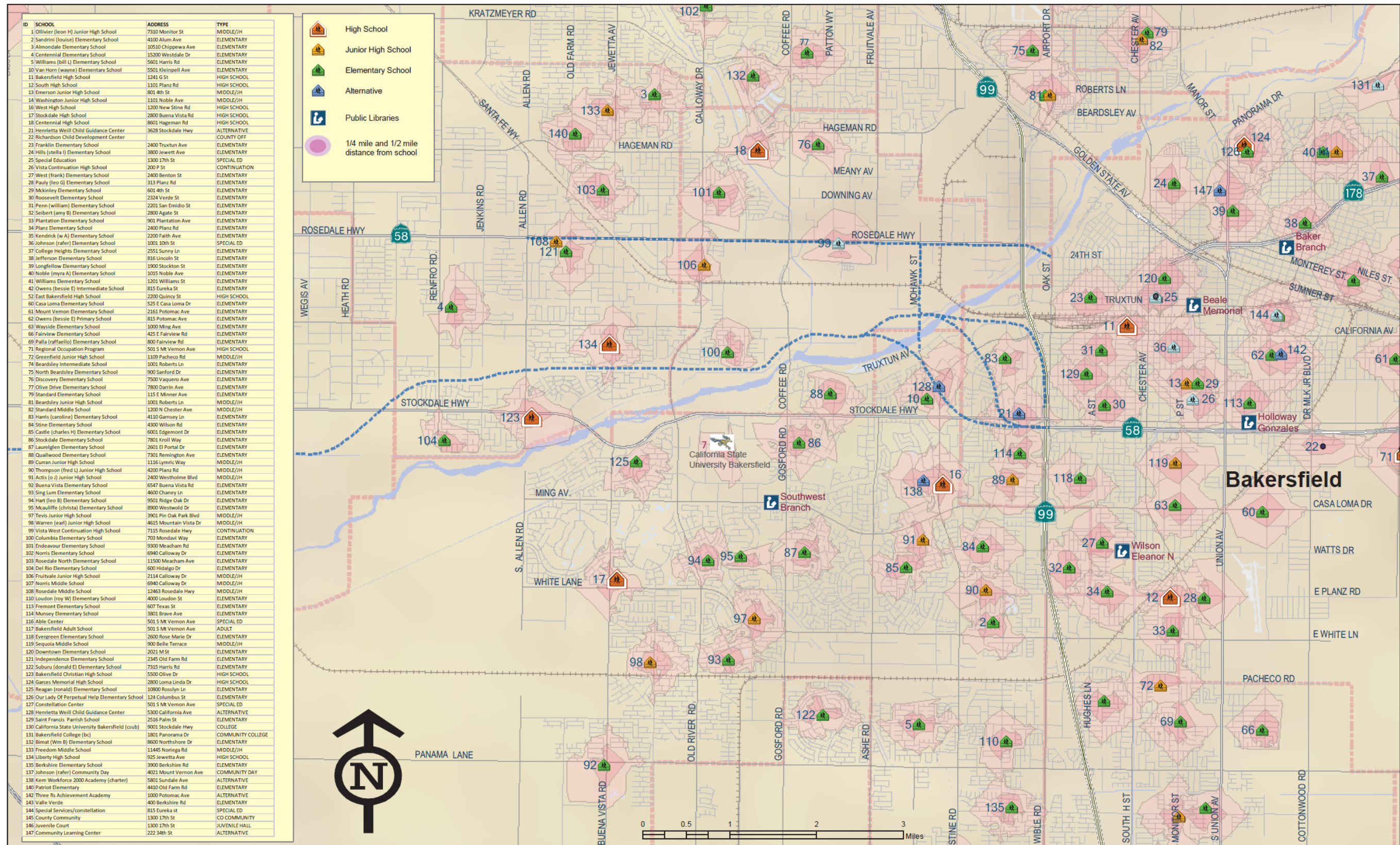


Figure 2-6: Locations of Libraries and Schools in the Centennial Corridor Study Area

Table 2-2. Census 2010 Total School Enrollment by Type (3 years of age and over)

TYPE OF SCHOOL	NUMBER OF STUDENTS	PERCENTAGE
Nursery School, Preschool	6,228	5.5%
Kindergarten	4,989	4.4%
Elementary, Grade 1 to 4	23,763	20.1%
Elementary, Grade 5 to 8	25,753	22.6%
High School, Grade 9 to 12	26,705	23.4%
College, Undergraduate	22,903	20.1%
Graduate, Professional School	3,855	3.4%
Total	114,196	100.0%

Eight hospitals can be found within the study area. The Mercy Southwest Hospital is located near Stockdale Highway while the HealthSouth Bakersfield Rehabilitation Hospital and Mercy Hospital of Bakersfield are both located near Truxtun Avenue. The remaining five hospitals are situated east of State Route 99 and north of Truxtun Avenue.

Shopping Centers

Various shopping centers are located throughout metropolitan Bakersfield. The Valley Plaza is located immediately to the east of State Route 99 south of Ming Avenue. The Stockdale Village Shopping Center is situated north of Stockdale Highway at California Avenue. In addition, two shopping centers are located along Ming Avenue west of State Route 99: the Builders Square Shopping Center at Stine Road and the Marketplace Shopping Center near the California State University of Bakersfield.

Recreational Facilities

Bakersfield currently has 55 parks located throughout the city, some of which are the Park at River Walk and Centennial Park near Stockdale Highway, Jastro Park and Central Park near Truxtun Avenue, and Saunders Park and Beach Park in the State Route 99 and State Route 58 areas. See Figure 2-8 for the locations of the parks and recreational facilities in the project study area.

The Rabobank Arena (formerly known as Centennial Garden) is home to Bakersfield's ECHL ice hockey team and California State University, Bakersfield Men's NCAA Division I basketball. Attached to the arena is a 3,000 seat theater and an approximately 18,000 square foot exhibit hall, which is presently known as the Rabobank Theater and Convention Center. The arena is located on Truxtun Avenue within the study limits.

Several other recreational facilities can also be found within the project area. Stockdale Country Club, Kern City Golf Course, and Seven Oaks Country Club are located between Stockdale Highway and White Lane on the west side of State Route 99. Bakersfield Country Club and Valle Grande Public Golf Course are located to the east of State Route 99. The Dr. Martin Luther King Jr. Community Center is also located within the study area. The facilities include meeting rooms, a kitchen, picnic areas and a gymnasium, which are available for public rental via reservation. The Saunders Recreation Facility, located at 3300 Palm Street in the project area, is a covered and lighted indoor/outdoor multi-use facility with a manufactured sports floor which can be utilized for roller hockey, basketball and indoor soccer. The facility is available for league sports as well as for rental purposes.

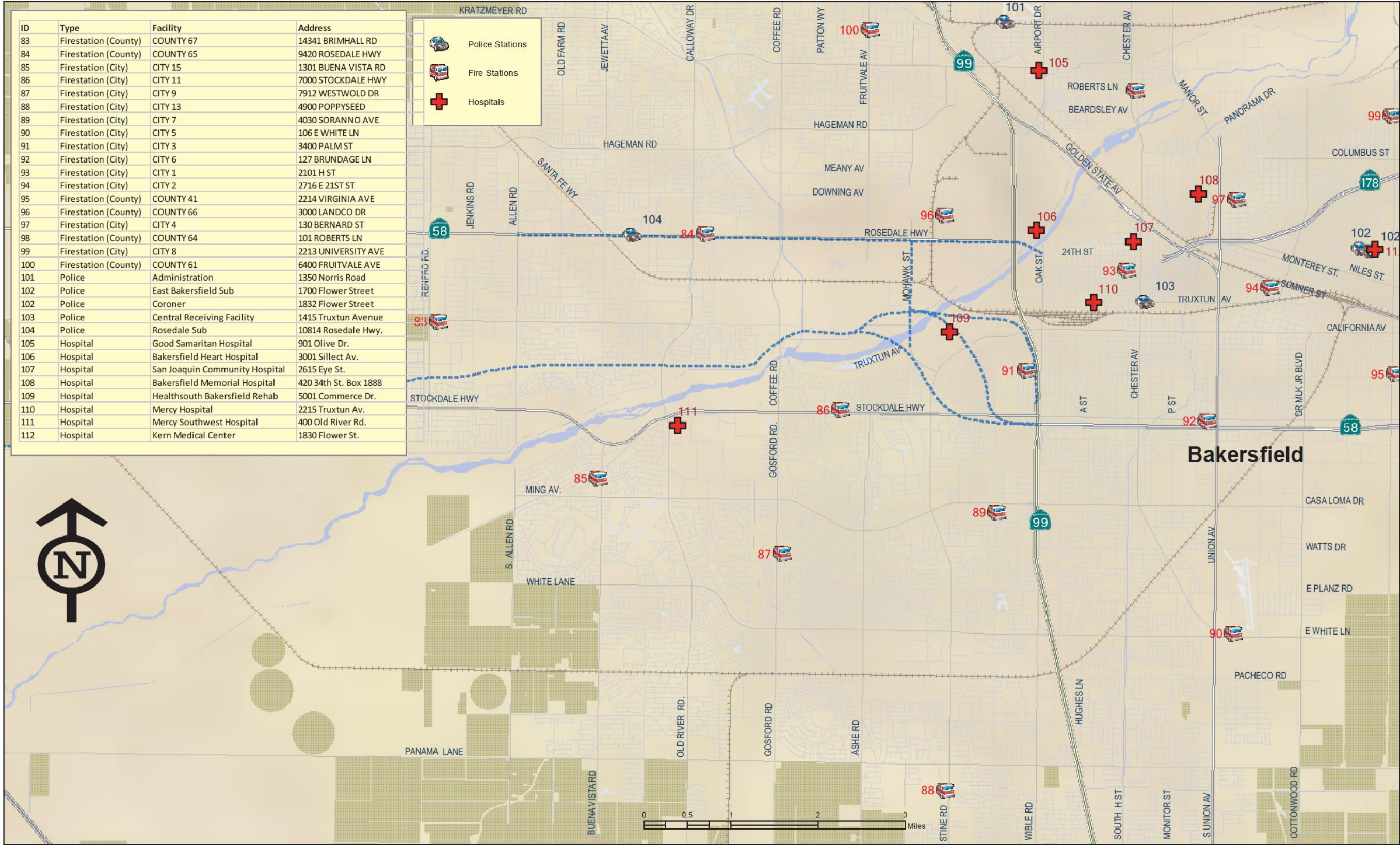


Figure 2-7: Locations of Fire and Police Stations in the Centennial Corridor Study Area



Figure 2-8: Locations of Parks and Recreational Facilities in the Centennial Corridor Study Area

The Bakersfield Ice Sports Center is another recreational facility which is located within the study limits. The center provides leagues for both youth and adult hockey as well as ice skating lessons, rental facilities, a pro shop and a snack bar. Adjacent to the ice sports center is the McMurtrey Aquatic Center, which is a state-of-the-art swimming, diving and recreational facility. The center contains a large recreational pool as well as a heated, Olympic-sized competition pool. The facility hosts various local high school swim meets and is also used for recreational swimming.

Journey to Work

Employment data included in the 2010 Census showed the means of transportation for workers 16 years and over in the Bakersfield metropolitan statistical area. Approximately 135,000 workers travelled in various transportation modes. The majority of the workers (93.1 percent) commuted by cars, trucks or vans (79.8 percent alone, 13.3 percent in carpools), 1.2 percent used public transportation, 3.5 percent worked at home, and 1.2 percent walked to work, while the rest (1.1 percent) travelled by motorcycle, bicycle, or other means. The mean travel time to work for all 97,100 workers who did not work at home was approximately 22.6 minutes.

2.2 Roadway Facilities

The juxtaposition of regional roadway and local arterial streets within the focused study area are illustrated on Figure 2-9. Their characteristics are described below.

Regional Roadway Network

State Route 99

State Route 99 is a north–south highway spanning nearly the entire length of the Central Valley. Between its northern terminus at State Route 36 near Red Bluff and its southern terminus at Interstate 5 near Wheeler Ridge, State Route 99 is considered an alternate route to the Interstate 5 corridor. This freeway passes through the cities of Bakersfield, Fresno, Merced, Modesto, Stockton, Sacramento and Ceres.

Within Bakersfield, State Route 99 has junctions with Panama Lane, White Lane, Ming Avenue, State Route 58 east, Stockdale Highway, California Avenue, State Route 58 west/Rosedale Highway, Buck Owens Boulevard, and Airport Drive/Golden State Avenue. In the study area, State Route 99 has four lanes in each direction with hard shoulders on the sides of the roadway. In addition, there are shoulders in the center of the route in each direction that are separated by a concrete barrier. The posted speed limit is 65 miles per hour (mph).

State Route 58

State Route 58 generally travels in the east–west direction for approximately 240 miles across California and is currently one of the most significant routes going through Bakersfield. West of Bakersfield, the route is called the Blue Star Memorial Highway and runs for roughly 100 miles until terminating at Highway 101, near Santa Margarita, California. East of Bakersfield, the route is called the Barstow–Bakersfield Highway for about 140 miles until terminating at Interstate 15 near Barstow, California.

Within this study area, State Route 58 is made up of four principal sections, as illustrated on Figure 2-10 and in the following text.



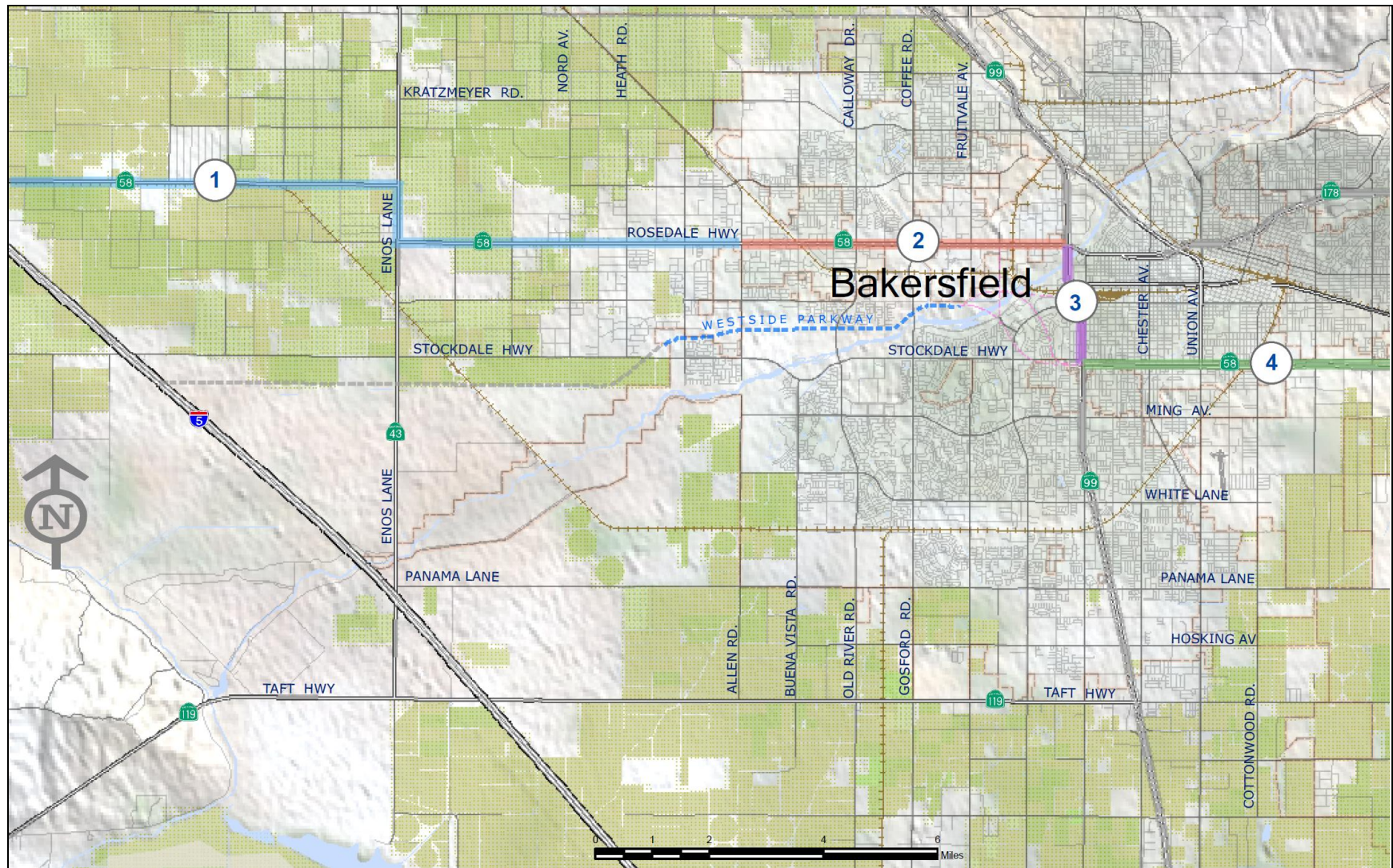


Figure 2-10: Principal Sections of State Route 58 in the Centennial Corridor Vicinity

INTERSTATE 5 TO ALLEN ROAD

Starting at Interstate 5, State Route 58 is currently a conventional highway, locally identified as the Rosedale Highway. Between Interstate 5 and Allen Road, the corridor is a two-lane facility surrounded by agricultural land with some recently developed residential areas. The alignment of State Route 58 through central Bakersfield is illustrated on Figure 2-11.

The alignment of State Route 58 is offset by approximately one mile where the roadway jogs, and is co-located with State Route 43. The intersections of State Route 43 with State Route 58 north and State Route 58 south are stop sign controlled. Speed limits are posted at 55 mph.

ROSEDALE HIGHWAY OR BLUE STAR MEMORIAL HIGHWAY

This section of State Route 58/Rosedale Highway is principally a business route with two lanes in each direction and outside turn pocket lanes at street intersections. The highway typically includes a slightly raised, non-landscaped median varying up to about 20 feet wide. No posted speed limits could be found, except in 25 mph school zones, but traffic generally travels at about 45 to 55 mph. Although there are very few residential areas directly along this highway, this section services the communities of Rosedale, Greenacres and Fruitvale, which surround the highway.

The first two miles of Rosedale Highway east of Allen Road is a mix of undeveloped land, old homes and businesses, and a trailer park. Just east of Allen Road is a 25 mph zone for Rosedale Middle School; and just past this school is Rosedale Park. Continuing east, the highway elevates over the BNSF Railway and then returns to its previous ground level. Past the railroad and as the route approaches Calloway Drive, there are some small businesses and shopping areas. For about a mile on the north side of the highway, between Calloway Drive and Coffee Road, exists a large restaurant and shopping center made up of newer “big box” retailers called the Northwest Promenade. The south side has a few smaller businesses, auto shops and gas stations, but the majority of the land is open for overhead power line towers and petroleum storage reservoirs. Just east of Coffee Road, the highway crosses over both the Friant–Kern Canal and then the Calloway Canal. The posted speed limit is reduced to 25 mph for the Vista West High School located to the south. Farther east, the highway crosses over Calloway Canal again as the canal turns back north near Fruitvale Avenue. Just east of this, the highway crosses over Emery Ditch and still farther east, is another railroad crossing. For the two and one-half miles between Coffee Road and the interchange with State Route 99, the highway services a few businesses and restaurants, but is mostly undeveloped or adjoined by light industrial land uses with some auto shops, storage facilities and warehouses. East of the railroad crossing, around Gibson Street, the speed limit is 40 mph. As the highway passes under State Route 99, it opens up to three lanes and will have additional single or double turn lanes as needed. The area surrounding this interchange is made up of numerous large restaurant and hotel chains. It also services the Bakersfield Heart Hospital located northeast of the interchange.

CO-ROUTE WITH STATE ROUTE 99

State Route 99 is an extensive north–south route in the middle of California servicing more than 400 miles of the state. It extends north past Sacramento and terminates at its junction with Interstate 5, about 20 miles south of Bakersfield. At the north end of Bakersfield, it provides freeway access to the Meadows Field Kern County Airport. Farther south, it has a large interchange with State Route 204 and Airport Drive.

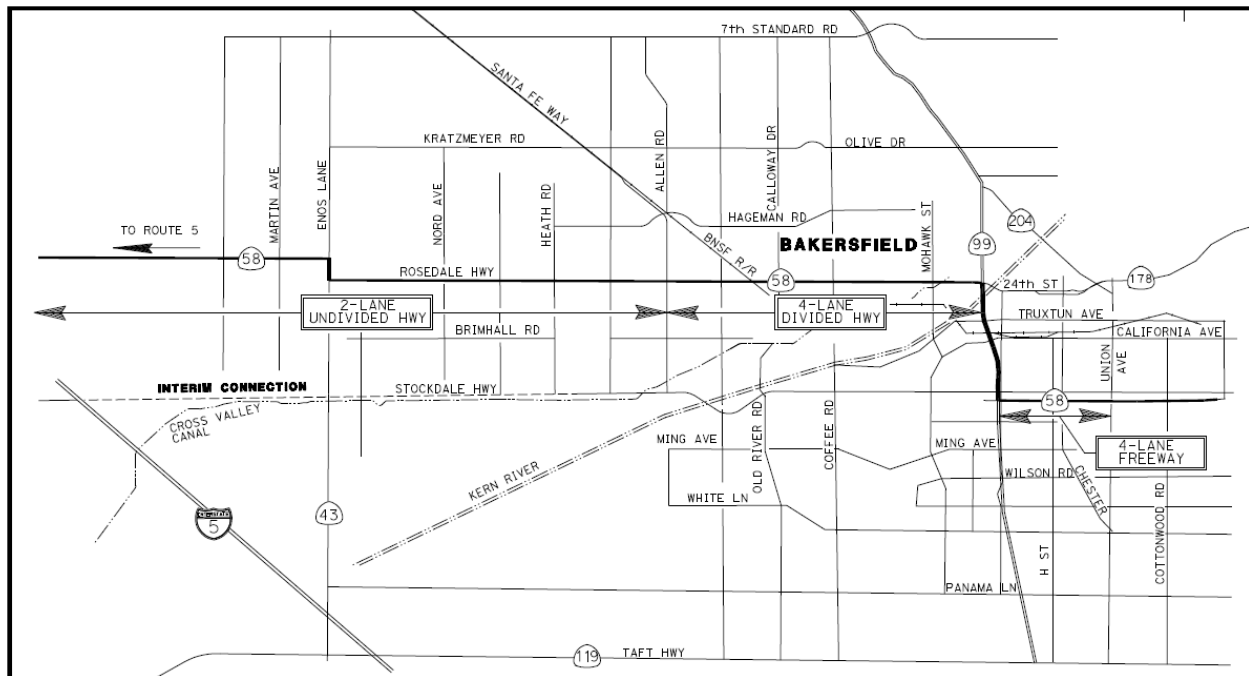


Figure 2-11: Existing State Route 58

Within the study area, east and west travel directions of State Route 58 have ramps that directly access southbound lanes of State Route 99. The two state routes combine and continue in the north-south direction for two miles until an interchange immediately south of Brundage Lane where both the routes diverge again. This portion of the freeway currently requires some maintenance, as the pavement condition is substandard. It consists of four lanes with shoulders in each direction, separated by a concrete barrier with a posted speed limit of 65 mph (55 mph for trucks or haulers). Exit numbers descend in the south direction. State Route 99 Exit 26 will connect travelers to 24th Street/State Route 178. Exit 25 connects to the Civic Center and California Avenue. Exit 24 accesses Stockdale Highway or Brundage Lane and the section where State Route 58 diverges east from State Route 99. One mile south is the final exit in the study area, Exit 23 for Ming Avenue.

STATE ROUTE 58 EAST OR BARSTOW-BAKERSFIELD HIGHWAY

East of Bakersfield, State Route 58 is also called the Barstow-Bakersfield Highway and continues east for about 140 miles until its junction with Interstate 15 near Barstow, California. Traveling south on State Route 99, the access ramp for State Route 58 east elevates high as an overpass above Stockdale Highway, State Route 99, State Route 58 and Wible Road, before descending back down to access eastbound lanes of State Route 58. Traveling west on State Route 58, an exit ramp connects to the State Route 99 northbound lanes as an underpass below Brundage Lane and Oak Street. The pavement in this section of State Route 58 is also not in excellent condition and requires maintenance. State Route 58 east is a divided highway separated by a metal barrier and a wide median. It consists of two lanes with shoulders in each direction and has a posted speed limit is 65 mph (55 mph for trucks or haulers). There are several residential areas offset from the highway on both sides up to the Union Avenue/State Route 204 exit. Exit numbers ascend in the east direction. Exit 111 provides access to Chester Avenue and downtown Bakersfield. About one-quarter mile west of Exit 114 for Mt. Vernon Avenue, the highway widens to three lanes in each direction and continues with this cross section as the road leaves Bakersfield.

State Route 178

State Route 178 consists of two separated segments. The separation is connected by different local roads and State Route 190 through Death Valley National Park. One of the segments starts at State Route 99 west of downtown Bakersfield, continues as 24th Street and joins Kern Canyon Road in the east. The other segment of State Route 178 starts in the southeasterly part of Death Valley National Park. It joins State Route 127 then branches north from State Route 127 to the California–Nevada state line.

State Route 178 intersects major roads such as State Route 99, Oak Street, F Street, Chester Avenue, Golden State Avenue (State Route 204), Union Avenue, Beale Avenue, Haley Street, and Mount Vernon Avenue.

Interstate 5

Interstate 5 is a major north–south route of the Interstate Highway System. Its southern terminus lies at the United States–Mexico border at the San Ysidro crossing and the route heads north across the length of California before it crosses into Oregon south of the Medford–Ashland metropolitan area.

This highway links the major California cities of San Diego, Los Angeles, Sacramento, and Redding. With the proposed Centennial Corridor, travelers in the Bakersfield area will connect with Interstate 5 at the west end of the corridor.

Major East–West Roadways in Study Area

Truxtun Avenue

Truxtun Avenue begins on the west end of the study area with a T-intersection at Coffee Road and continues northeasterly just south of the Kern River paralleling its meandering alignment until passing under State Route 99. The posted speed limit on the west end is 55 mph, but then reduces to 45 mph for the segment approaching the BNSF Railway grade separated crossing until Oak Street. The majority of the western half is not divided with a barrier, but includes a two-way left-turn lane. There are no bike lanes or on-street parking. Truxtun Avenue from Oak Street toward the east is two lanes in each direction with on-street parking. As the arterial approaches Chester Avenue, it widens to three lanes with right turn lanes for the remainder of the eastern study area.

Immediately east of Coffee Road, Truxtun Avenue crosses the Arvin–Edison Canal. The majority of this segment is flanked by a grassy area, including trees, shrubs and a park-type area on the north (Kern River) side. On the south side of Truxtun Avenue, there are some newer business buildings, office parks, numerous medical centers and facilities. Truxtun Plaza West and East, Office Park Drive and Commercial Way provide access to these centers. Truxtun Avenue intersects Mohawk Street, which is currently under construction for an extension to the north. Approximately one mile west of downtown, Truxtun Avenue passes under the BNSF Railway and the land use changes to primarily undeveloped and industrial use. East of this point, the roadway diverges from the path of the river and continues directly east through the heart of downtown Bakersfield, running parallel to and just north of the BNSF Railway.

After passing under the State Route 99 freeway, Truxtun Avenue provides access to major downtown landmarks and public service facilities such as Mercy Hospital, the Bakersfield Police Department, the Greater Bakersfield Chamber of Commerce, Bakersfield City Hall, the Kern County Superior Court, Rabobank Arena Theater and Convention Center, a TRIP office building, the Greater Bakersfield Convention and Visitor's Bureau, County of Kern Administrative Center, the Bakersfield Amtrak Station and the Beale Memorial Library. The roadway also provides connection to many north–south downtown streets that service numerous hotels, bars and restaurants. Within the downtown limits, the posted speed limit ranges from 25 to 40 mph. The majority of this downtown arterial includes a landscaped, raised median about 15 feet in width with sidewalks on both sides, and restricted parallel parking for access to frontage businesses. Although the principal land use is commercial, there are a few churches along this segment and single-story family homes with no property walls.

As Truxtun Avenue approaches the eastern end of the study area, it becomes elevated over Union Avenue. However, 25 mph at-grade roads exist on each side to provide vehicle access to and from Union Avenue. These frontage one-way roads also allow eastbound travelers to make U-turns in order to travel toward the west on Truxtun Avenue.

New Stine Road/California Avenue

New Stine Road generally runs in the north–south direction and originates approximately 10 miles south of Stockdale Highway at Bear Mountain Boulevard. After crossing Stockdale Highway to the north, the road becomes California Avenue and its alignment turns northeast. California Avenue runs in an east–west direction through downtown Bakersfield just south of Truxtun Avenue and the BNSF Railway and about one mile north of State Route 58 (Barstow–Bakersfield Highway). It continues east past the study area, about 2.5 miles past Union Avenue, until merging with Edison Highway/State Route 184, which follows the Union Pacific Railroad out of Bakersfield.

New Stine Road

The segment of New Stine Road within the study area is approximately one mile long between Ming Avenue and Stockdale Highway. This segment primarily serves the community of Kern City. It has a posted speed limit of 45 mph, is three lanes in each direction with a median approximately 15 feet wide and has right-turn lanes at intersections. The roadway has bike lanes, but no on-street parking. The majority of this segment is residential including both single-family homes and a few apartment complexes. West High School, which is located on the east side of New Stine Road at Sundale Avenue, contains park areas and sports fields. The surrounding area on the other side of the street includes residential communities for senior adults and retirees. Farther north on the west side, there is a wide, non-striped road running parallel to New Stine Road to provide separate access for the residential community there.

California Avenue

As New Stine Road crosses north past Stockdale Highway and becomes California Avenue, the roadway operates with three lanes in each direction. In this initial segment of California Avenue, the bike lane striping is discontinued and the speed limit is reduced to 40 mph. The arterial continues to be divided by an approximately 15-foot wide median and is heavily landscaped on both sides. This initial segment of California Avenue crosses over the Gates Canal and begins

turning toward the northeast in the direction of State Route 99. There is a church, University of Phoenix and a few apartment complexes, but the surrounding land uses are primarily made up of shopping centers, restaurants and businesses. These retail centers include the Stockdale Village, Stockdale West and Fashion Plaza shopping centers. Farther north, a new shopping area named 99 Plaza is to be developed. The medians narrow as California Avenue passes under the State Route 99 overpass. On either side of this crossing are gas stations, fast food restaurants and small businesses.

After passing the Oak Street intersection, California Avenue operates in the east–west direction and continues to be six lanes with a landscaped median and no designated on-street parking. The roadway serves the downtown Westchester community and for the next mile, the south side of the roadway is primarily residential without property walls. The north side has several parallel BNSF Railway tracks to allow for switching trains. As California Avenue approaches H Street, the majority of the north side includes several large facilities and a stadium that are a part of Bakersfield High School. In the vicinity of the school, the posted speed limit is 25 mph.

The remaining segment of California Avenue within the study area continues to operate with three lanes in each direction with a large, landscaped median. The landscaping includes large trees and shrubs and is hardscaped with rocks as a base. The speed limit varies between 35 and 40 mph. The median narrows when there are left-turn pockets at intersections or other access points. Newer, more modern, businesses exist between H Street and Chester Avenue. Maya 16 Cinemas is located on the north side and businesses, offices, restaurants and auto shops populate the frontage through to Union Avenue. Parallel on-street parking is available outside the travel lanes for some of the small businesses. Business buildings become older and smaller farther east and some light industrial land uses are located at the eastern end of the route.

Stockdale Highway/Brundage Lane

Stockdale Highway traverses the study area in the east–west direction. From Allen Road, it continues to the State Route 99/State Route 58 interchange and operates as Brundage Lane east of this interchange, continuing past Union Avenue.

The majority of Stockdale Highway includes bike lanes and a raised median approximately 10 to 15 feet wide with well-maintained landscaping. From Allen Road to the vicinity of the Gosford Road/Coffee Road intersection, the highway provides three travel lanes in each direction with a speed limit of 55 mph. Just east of Allen Road, the highway curves to the southeast as it crosses the Kern River and the Cross Valley Canal. It continues this way until reaching the intersection with Buena Vista Road where it turns back to the north. To the south is the BCHS Sports Center and Fresno Pacific University, and to the north is a well-maintained public area called The Park at Riverwalk.

As the highway approaches the Old River Road/Calloway Drive intersection, land uses include restaurants, businesses and a few residential areas. Mercy Southwest Hospital and several medical business and facilities are located just east of this intersection. Farther east, the highway crosses the Kern River Canal. To the south, the California State University of Bakersfield is spread across approximately a square mile of land.

From the Gosford Road/Coffee Road intersection to State Route 99, the speed limit is reduced to 45 mph, but the raised, landscaped median and bike lanes continue. Three traffic lanes continue until the New Stine Road/California Avenue intersection, and then the highway narrows to two lanes in each direction. The segment serves a higher density of mixed residential and business land use and includes businesses, restaurants, shopping centers and churches. The residential areas are a mix of apartments, living communities separated with property walls and single-story homes with no property dividers. This section also has some residential areas accessed via service roads which run parallel to the highway. These residential access roads are typically unstriped and wide enough to allow for parking.

As Stockdale Highway crosses over State Route 99/State Route 58, it also passes under an overhead structure for an access ramp and the name of the road changes to Brundage Lane. Brundage Lane forms the southern boundary of downtown Bakersfield and continues to operate in an east–west direction, closely paralleling State Route 58 just to its north. Union Avenue is approximately two miles east of this crossing and the land use is primarily fast food, gas and auto or other business use with older, less maintained buildings. There are also a few older houses and apartments. The road narrows to two lanes, the speed limit is reduced to 40 mph, and there is a two-way, left-turn lane in the center.

Ming Avenue

Ming Avenue is a major arterial that traverses the study area in an east–west direction. On the west end, it starts at Allen Road from a T-intersection. Although the first mile east of Allen Road to Buena Vista Road utilizes only two lanes in each direction, the majority of this arterial includes three lanes in each direction. The arterial also includes additional single and double outside turning lanes at intersections, striped bike lanes, and a posted speed limit of 45 mph. From Allen Road to New Stine Road, it principally services residential communities along its route, where the west end has newer, more expensive homes with tall property walls. The route includes a heavily landscaped, raised median varying up to 20 feet wide and well-maintained landscaping and sidewalks along both sides of the road. The Seven Oaks Country Club and its golf course are located on the south side, between Buena Vista Road and Old River Road. This entire section also contains the Seven Oaks residential community. From Old River Road to Gosford Road, the residential use continues with the Haggin Oaks Community. This section also includes some small businesses, restaurants, markets and shopping areas. Near the southwest corner of Ming Avenue and Gosford Road is the Kern County Southwest Branch Library. This intersection continues to have residential communities separated by property walls on all four corners. Ming Avenue then services the Stockdale residential community east of this intersection. Newer homes without property wall separation exist along this section of the route. From Ashe Road to the State Route 99/58 interchange with Ming Avenue, the median is less significant and landscaping is reduced considerably, but still exists. Also, the land use contains more of a mix between smaller homes, apartment complexes and small businesses, gas stations and fast food restaurants.

Ming Avenue crosses above State Route 99/58 with an overpass structure and contains exit and entrance ramps to the freeway. The Valley Plaza regional shopping center is located on the northeast corner of this interchange and includes larger buildings for major department stores and restaurants. Just east of this mall and near Hughes Lane, the road reduces to two lanes in each direction with a striped, non-raised median center turning lane with some parking permitted along

the outside of the road. There are a few single-story residential homes along this portion of the route, but the majority of land use is small businesses. East of H Street, the posted speed limit drops to 40 mph. Although there is a park and school to the north, the remaining route through to Union Avenue is less maintained and principally contains older businesses and gas stations. The opposing direction of travel on the road soon is separated only by a double striped centerline. Just east of the Union Avenue intersection, the road name changes to Casa Ioma Drive.

Major North–South Roadways in Study Area

Allen Road

Allen Road is currently a minor arterial in the study area that runs in the north–south direction. Although some of the land on either side of this road is either undeveloped or includes a few small shopping areas and gas stations, Allen Road is primarily surrounded by residential communities within this study area. These communities are typically bordered with property walls. With the exception of a school zone, no posted speed limit signs were found along this road.

The northern limit of Allen Road within the study area is at Rosedale Highway. Generally, the northern half of Allen Road is one lane in each direction and is divided by either a two-way left-turn lane or a double yellow center line. The southern half of Allen Road typically consists of two lanes in each direction with a raised, landscaped median. Certain sections have extra wide outside lanes as the cross section is established to eventually provide three lanes in each direction. There are also some bike lanes and on-street parking within this southern segment, especially near the school. As Allen Road approaches Stockdale Highway heading south, the speed limit is posted as 25 mph for the Bakersfield Christian High School, which lies farther south and utilizes much of the land on the east side of the road.

The southernmost section of Allen Road was just recently constructed. This extension begins just north of the Kern River and continues to Ming Avenue. It includes a major bridge crossing over the river and the Cross Valley Canal. The Kern River Parkway Bike Trail is south of the river. The southern limit of Allen Road within the study area ends at Ming Avenue.

Calloway Drive/Old River Road

Calloway Drive is an arterial that runs in a north–south direction starting north of Rosedale Highway and continuing south until Stockdale Highway, where the name changes to Old River Road. This road serves a mix of land uses including residential, commercial, medical facilities and schools. The posted speed limit ranges from 45 to 55 mph. Although the northern segment begins with two lanes in each direction, the majority of the road is, or will be after construction, three lanes in each direction.

The northern segment operates at 45 mph with two lanes in each direction and a two-way left-turn lane. Land use includes residential and the Fruitvale Junior High School, which is located on the east side, along with the Greenacres Park. Farther to the south, the arterial includes a 15- to 20-foot wide landscaped, raised median and side access roads. The road continues toward the south, passing under a BNSF Railway bridge and provides access to more residential areas south of the railroad.

As Calloway Drive approaches Brimhall Road, new businesses, restaurants, and convenience stores surround the intersection. The road transitions to three lanes in each direction with bike

lanes and continues with the raised landscaped median. At this point, it is assumed that the speed limit increases to 55 mph. South of Brimhall Road are residential communities with property walls on each side of Calloway Drive. Farther south, a segment of the roadway is currently under construction. The roadway narrows here to two lanes with a narrow center-striped, non-raised median. The road transitions back to three lanes with a bike lane beyond the construction zone. Residential communities continue to exist along the route. On the last segment of Calloway Drive, before it approaches Stockdale Highway, the road has a bridge structure that passes over both the Cross Valley Canal and the Kern River.

As the road continues south past Stockdale Highway, its name changes to Old River Road. The speed limit remains 55 mph. The roadway has three lanes in each direction and additional right-turn lanes at intersections. The land use on the west side of the road is primarily residential communities separated by property walls. The Mercy Southwest Hospital and other medical facilities are located on the east side of the road, immediately south of Stockdale Highway. Farther south, there is a U.S. post office and a business center with several large business buildings. Beyond this medical and business frontage, the California State University of Bakersfield with its facilities utilizes the majority of the land. As Old River Road reaches the southern limit of the study area at Ming Avenue, there is a new roadway that is completed, but not yet striped. This portion of the roadway is currently narrowed to a single lane due to construction. It is expected that this segment will have three lanes and a bike lane upon completion, consistent with previous portions of the arterial.

Coffee Road/Gosford Road

Coffee Road is an arterial that runs in a north–south direction starting at Rosedale Highway and continuing south until Stockdale Highway, where the name changes to Gosford Road. The posted speed limit is 55 mph and the majority of the roadway consists of three lanes in each direction with additional right-turn lanes at intersections. There are bike lanes and a raised, landscaped median that varies in width, with a maximum width of approximately 20 feet.

The northern part of Coffee Road is mostly undeveloped with open land, storage reservoirs, overhead power lines, reception towers and other industrial use. Half a mile south of Rosedale Highway, Coffee Road passes over the BNSF Railway with similar land use along the road beyond this bridge. There are some gas stations on each side of the road approaching the intersection with Brimhall Road. South of this point, there is another, larger bridge as Coffee Road crosses over the Cross Valley Canal and the Kern River before arriving at Truxtun Avenue. This intersection is a T-intersection which only has the option to travel east. Between Truxtun Avenue and Stockdale Highway, the road crosses over the Arvin–Edison and Kern River Canals and services several businesses, restaurants, stores and The Fountain Plaza Shopping Center.

As the route passes south of Stockdale Highway, the road name changes to Gosford Road, but maintains similar conditions of 55 mph speed limit, three lanes in each direction, outside turning lanes, bike lanes and a wide, landscaped, raised median. This segment of Gosford Road within the study area, until the Ming Avenue intersection, primarily serves the Stockdale residential communities, which are separated from the road with property walls, tall trees and landscaping. The east side has a standard sidewalk, while the west side includes a meandering concrete pedestrian path.

Oak Street/Wible Road

Within this study area, Oak Street/Wible Road is generally a frontage road running parallel and just to the east of State Route 58/State Route 99. This roadway generally forms the western border of downtown Bakersfield and serves a variety of businesses along its route. Similar to other north–south roadways, Oak Street maintains its name until passing south of Stockdale Highway, where the name changes to Wible Road. Both segments are typically either two or three lanes in each direction with bike lanes along most of the route. The median varies from a double-striped centerline to a two-way left-turn lane to a wide, raised median at the south end.

In the north, Oak Street begins with two lanes at the 24th Street intersection just southeast of the Kern River and Beach Park. It has a posted speed limit of 40 mph for most of its length. Along the northern part of Oak Street, the State Route 58/State Route 99 highway is offset approximately one-half mile to the west, allowing enough room for car dealerships, a variety of businesses, restaurants and office parks on each side. South of Truxtun Avenue, there is an extensive bridge for the road to pass over several track lines of the BNSF Railway. As Oak Street continues south of Truxtun Avenue, the alignment of State Route 58/State Route 99 begins to transition toward the east and closer to Oak Street. As Oak Street approaches California Avenue, there are several gas stations and fast food restaurants and the road widens to three lanes with right-turn lanes. Farther to the south, State Route 58/State Route 99 operates in close proximity to the west side of Oak Street, preventing any development or infrastructure on this side. However, Oak Street continues to provide access to hotels, gas stations, fast food places, car dealerships, automobile shops and other businesses located on the east side. Upon reaching Stockdale Highway, the road narrows back to two lanes in each direction while still maintaining bike lanes.

As Oak Street continues south of Stockdale Highway/Brundage Lane, the roadway name changes to Wible Road and the posted speed limit becomes 45 mph. The roadway passes under several overhead highway and ramp structures, all part of the merging interchange of State Routes 58 and 99. State Route 99 continues to run parallel and adjacent to the west side of Wible Road, allowing no other development on that side. The east side consists of various small businesses, with two travel lanes and bike lanes separated by a center double-stripe only. A wide median with no landscaping exists at the southern end, as the study limit ends at Ming Avenue. The Valley Plaza Mall is located on the southeast corner of this intersection.

Chester Avenue

Chester Avenue is an arterial that operates in a north–south direction through the heart of downtown Bakersfield, almost halfway between State Route 58/State Route 99 and Union Avenue. Beyond the study limit of Ming Avenue, the roadway name changes to South Chester Avenue and its alignment begins to veer in the southeast direction. The posted speed limit is either 40 mph or 45 mph and the majority of this route consists of two lanes in each direction, a center striped median, right-turn lanes at intersections and bike lanes. Chester Avenue primarily serves a variety of businesses, but does have some residential areas to the south.

Within the study area, the north end of Chester Avenue begins at Golden State Avenue and soon crosses over 24th Street (westbound), and then 23rd Street (eastbound), a one-way couplet. The speed limit is 40 mph. The Bakersfield Museum, City of Bakersfield Parking Mall, office parks,

banks and multi-story business buildings are located here. The buildings are relatively newer along this northern segment. There is on-street parking on each side, with wide sidewalks and a small, landscaped, raised median.

Beyond the Truxtun Avenue intersection, City Hall is on the west and the courthouse is located on the east side. The road passes under the BNSF Railway before approaching California Avenue. From this intersection until Brundage Lane, which is one mile farther to the south, there are a variety of restaurants and small businesses fronting the road with time restricted parking on each side. South of Brundage Lane, Chester Avenue intersects with State Route 58 ramps and the road crosses over the highway and then over a water canal.

The southern end of Chester Avenue has a posted speed limit of 45 mph and primarily provides access to residential neighborhoods. There are no property walls, but the homes are separated from the roadway by a wide, raised, landscaped median and parallel side frontage roads on each side of Chester Avenue. These frontage roads are not striped, but are marked as one-way and are approximately three lanes wide. The speed limit on the access roads is 25 mph. Residents park on both sides of the frontage roads leaving the center of the road for cars to travel through.

Union Avenue

Union Avenue, also called California Business Route 204/99, runs in a north–south direction and forms the eastern limit of the study area and of downtown Bakersfield. The posted speed limit is 40 mph and the majority of the road is three lanes in each direction.

On the northern end, Union Avenue passes under State Route 178 and ramps, then over the Union Pacific Railroad as it merges with Golden State Avenue (State Route 204). The route passes under Truxtun Avenue and the BNSF railroad that passes by the Amtrak Station to the west, before approaching California Avenue. This northern segment of Union Avenue primarily serves industrial areas and small businesses including fast food places and gas stations.

South of the California Avenue intersection, the route continues to operate with three lanes in each direction with a posted speed limit of 40 mph. There are varying landscaped medians up to approximately 15 feet in width. This southern segment contains numerous, relatively old lodging establishments along the rest of the route. After crossing Brundage Lane, Union Avenue crosses over and interchanges with State Route 58 and serves more small businesses, fast food places and gas stations, which are located at all intersections. The Kern County Fairgrounds and parking is located on the west at the end of the route and the road narrows to two lanes before approaching Ming Avenue and another industrial lead railroad crossing.

2.3 Existing Traffic Volumes

Figure 2-12 illustrates average daily traffic volumes on the various regional and local roadways described above. These traffic volumes were collected for the Kern Council of Governments during 2009 and/or 2010, for the most part. Other historical traffic count data can be viewed on the Kern COG website at www.kerncog.org.

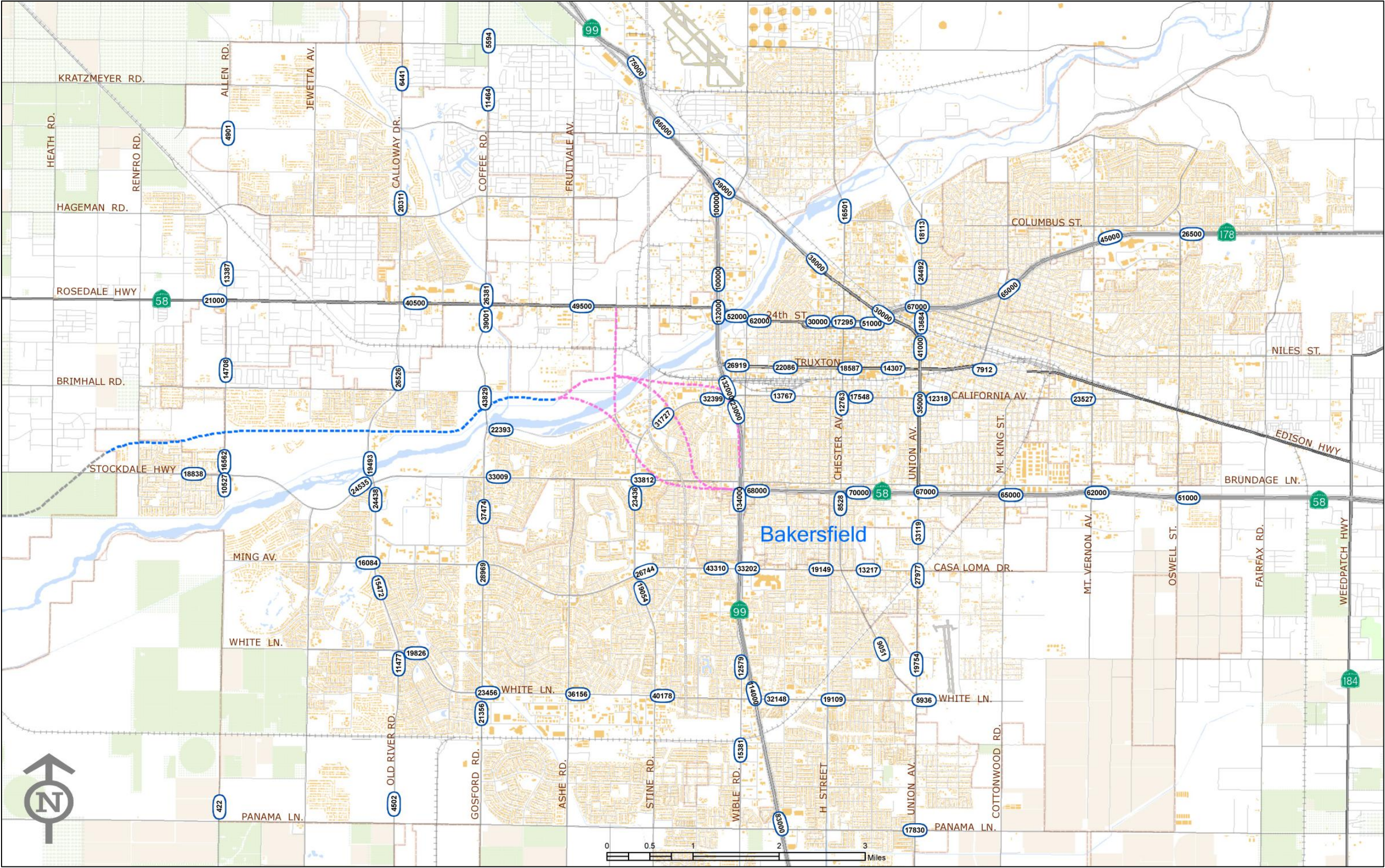


Figure 2-12: Average Daily Traffic Volumes